ASSOCIATION OF STOMA CARE NURSES UK

EXPASS

Exercise and Physical Activity after Stoma Surgery

Best Practice Recommendations

Version 1.1

March 2026

DISCLAIMER

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SUGGESTED CITATION

To reference this guide, use the following suggested citation:

Russell S, Archer K. EXPASS - Exercise and Physical Activity after Stoma Surgery: Best practice Recommendations (Expert Panel Consensus). ASCN UK (Association of Stoma Care Nurses UK). 2025. Available from: https://ascnuk.org

OPEN ACCESS

ACKNOWLEDGMENTS

The recommendations were funded by unrestricted educational grants from Clinimed, Coloplast, Convatec, CUI International, Eakin, Salts and Suportx.

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

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Conflicts of Interest

Sarah Russell is a consultant with Convatec and the Ileostomy Association; Kerry Archer has provided services to Salts Health Care. Faye Jones is a consultant with Convatec. Wendy Osborne is an employee of Coloplast and a member of ASCN UK committee. Caroline Rudoni is an employee of SecuriCare Medical.

FOREWORD

These **Ex**ercise and **P**hysical **A**ctivity after **S**toma **S**urgery (EXPASS) best practice recommendations are the first to be published in the world and are long overdue. They aim to fill a gap (specifically about exercise, movement, and physical activity) in both the care pathway of individuals undergoing stoma surgery and enhance the knowledge of professionals caring for these individuals. (*Note*. Professionals include exercise, health care, and medical. See **Glossary and Abbreviations** for further details.)

The gaps in knowledge and lack of standardisation in care is stark and concerning. The advice and support provided to individuals is often contradictory and confusing. Individuals are often left feeling disabled by their stoma and unable to return to work or the activities they enjoy. Research has shown that the vast majority of people living with a stoma do not do enough physical activity for their health. Current advice on exercise after stoma surgery is contradictory, often restrictive, overly cautious, and with no agreed consensus. It is the aim of this document to challenge the dogma that exercise is somehow dangerous or risky; to consider the importance of the wider health and well-being of the individual, not just the stoma or risk of hernia; and to position exercise and physical activity as a positive and essential part of life. Our hope is that these recommendations start to change these worrying trends. With careful consideration and consultation with professionals and people with lived experience, these EXPASS recommendations have taken a number of years to develop. The EXPASS Expert Panel has worked under the supervision of ASCN UK.

Clinical practice is becoming more established in the area of physical activity and exercise with a stoma, and despite, and despite the lack of published research, there is sufficient knowledge and experience currently available to develop best practice recommendations. They are evidence-informed and incorporate the most up-to-date methods and thinking drawn from current clinical practice and other areas of medicine and exercise science. Making a complex topic simple to understand and implement has not been easy, and that has been the key challenge we have faced. Individuals have stoma surgery for a wide range of medical conditions; therefore, the stoma is simply the outcome, not the condition. The recommendations aim to address these individual differences, and we have attempted to simplify a range of complex and varied factors.

These are recommendations, not formal guidelines. We aim to provide a general framework, while taking into account the needs and situation of the individual. The overarching ethos is to empower individuals to take control of their own recovery and life with a stoma, so that they can be physically active and enjoy better quality of life.

As a professional caring for an individual having stoma surgery, you are in a privileged position to help them on that journey, and we hope these recommendations support you to do that.

But this is just the beginning. There are inevitable limitations in these recommendations, and more research needs to be done in this area. It is the hope of the EXPASS Expert Panel that these recommendations will continue to evolve for additional research and further development.

Sarah Russell, MSc, BSC, RCCP and Kerry Archer, MSc, MCSP

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Kerry Archer, MSc, MCSP

ENDORSEMENTS

We are pleased to share that this document has been endorsed by several associations.

Association of Chartered Physiotherapists in Oncology and Palliative Care (ACPOPC)

Association of Coloproctology Nurses of Great Britain and Ireland

The Association of Coloproctology Nurses of Great Britain and Ireland are happy to endorse the EXPASS document.

Nurses Specialized in Wound, Ostomy and Continence Canada (NSWOCC®)

Endorsed by Nurses Specialized in Wound, Ostomy and Continence Canada, 2025.

NURSES SPECIALIZED IN WOUND, OSTOMY AND CONTINENCE CANADA
INFIRMIÈRES SPÉCIALISÉES EN PLAIES, STOMIES ET CONTINENCE CANADA

Wound Council of Enterostomal Therapist

The WCET® Executive Board is thankful for the development of the "EXPASS Best Practice Recommendations" aimed at improving the health and wellbeing of individuals pre and post stoma surgery. WCET® fully endorses this document which has been reviewed by members of the WCET® Executive Board.

INTRODUCTION

Welcome to these EXPASS best practice recommendations.

These recommendations are specifically about **exercise** and **physical activity** before and after stoma surgery as well as living with a stoma long term. There is limited research in this area and, therefore, a concerning gap in the knowledge of professionals. They have been developed by the EXPASS Expert Panel (who have been mindful of this limited research), based on a mix of clinical experience, expert opinion, and themes drawn from the research available at the time of publication.

Who Are They For?

This document is aimed at any professional caring for or working with adults (> 16 years) having stoma surgery or living with a stoma. Individuals having stoma surgery themselves are also welcome to refer to these recommendations. The recommendations focus both on those having an initial formation of a urostomy, ileostomy, or colostomy for any reason and on specific recommendations related to exercise and physical activity. These recommendations do not specifically cover parastomal hernia repair or stoma reversal, but they do consider exercising with a parastomal hernia. The information, however, is still likely to be relevant and appropriate.

Why Are They Needed?

Formal published recommendations related to exercise, physical activity, and stoma surgery do not currently exist. The EXPASS recommendations aim to address this significant gap. Surgery to create a stoma impacts as many as 13,500 people each year in the UK, and it is thought that around 1 in 350 people live with a stoma.[1] The causes of stoma formation are varied and, in some cases, can result in complex life-changing surgery. Some physical rehabilitation following stoma surgery is generally considered an important process in enabling a return to activities of daily living, school or work, and exercise.[2] Low levels of physical activity are prevalent in individuals living with stomas, and the negative implications of inactivity are significant in terms of incomplete recovery, comorbidities, poor quality of life, and reduced health span.

There is a significant gap in the knowledge base of professionals, and the advice for individuals having stoma-forming surgery (specifically around exercise, physical activity, and rehabilitation) can be poor, confusing, and inconsistent. Professionals want to be able to support individuals having surgery with better advice and guidance, and individuals should be able to access trusted, well-informed information. Individuals want to know what they can do to optimise their recovery, exercise safely, reduce their chance of hernia, and return to the activities and lifestyle they enjoy. Available advice about exercise (accessed online or provided by professionals) is contradictory and confusing, and there is no national nor global standardisation. Advice given is often based on personal experience and the bias of professionals, and dogma is deeply entrenched in clinical practice.

What is Outside of the Scope of EXPASS?

Health and well-being in relation to surgery is a broad topic. To focus how the evidence informs practice the Expert Panel excluded the following:

- Advice related to diet, hydration, and nutrition
- Paediatrics - under 16 years
- Sexual function and intimacy

While these recommendations are aimed at individuals having initial stoma formation or those already living with a stoma, the general advice is still very relevant and appropriate for individuals having hernia repair or stoma reversal.

What Are the Aims?

The EXPASS best practice recommendations have multiple aims:

- Professionals will feel more confident (specifically related to exercise and physical activity) when supporting individuals having surgery with appropriate advice about preparing for and recovering from surgery as well as living with a stoma long term.
- Individuals will have less fear avoidance and will feel more confident about engaging safely in appropriate physical activity, occupations, and exercise.
- While the recommendations do not focus specifically on parastomal hernia prevention or management, it is likely that appropriate rehabilitation and exercise may reduce the risk of parastomal hernia and help to manage existing herniation.
- Individuals will be able to consider how to optimise their recovery, exercise safely, and get back to the activities, occupations, and lifestyle that are important to them.
- Increased levels of appropriate physical activity will lead to better general health outcomes for individuals, with fewer comorbidities and increased quality of life.
- A reduction of the burden of cost for the National Health Service (NHS) and wider economy in relation to the NHS plan 2025.[3] These are related to improved health, reduced comorbidities and reduced risk of hernia. Economic considerations for the wider society include returning to work and contributing to the economy.

A standalone EXPASS quick reference guide is included to enable professionals to scan key aspects of the framework and explain it to individuals. Refer to **Appendix 1 EXPASS Recommendations, References, and Level of Evidence** for the list of references and assigned level of evidence supporting them. **Appendix 2 Methodology** explains the methodology followed in the development of these recommendations, while **Appendix 3 Literature Review Summary** recaps the evidence reviewed supporting each of the recommendations.

Exercise and Physical Activity

In this document the words exercise and physical activity are used interchangeably, and each person reading it will bring their own definition and interpretation to the terms. However, for clarity, the World Health Organization (WHO) defines physical activity as any bodily movement produced by skeletal muscles that requires energy expenditure. Exercise is considered to be more of a subset of physical activity and can be defined as 'physical activity that is planned, structured, and repetitive for the purpose of conditioning any part of the body.' Exercise is considered to be more intentional, whereas physical activity may occur as a consequence of daily living.

The recommendations will address these common frequently asked questions (FAQs) specifically about exercise and physical activity. Refer to the helpful narrative answers to these FAQs in section **Common FAQs From Individuals With Stomas**.

- What can I do?
- When can I do it?
- How can I best prepare for surgery?
- How can I best recover?
- Is there anything I need to avoid?
- How can I reduce my risk of hernia?

> "My advice to anyone. You absolutely need to exercise! Don't be scared to move!"

GLOSSARY AND ABBREVIATIONS

active occupations–occupations that involve light/moderate lifting, lengthy periods of standing, carrying loads, or repetitive pushing or pulling (e.g., teacher, health care professional [nurse, physiotherapist, or surgeon], caregiver, warehouse operative, delivery driver, gardener, shop work, and hairdresser).

core–the muscles and connective tissue making up the entire abdominal wall and pelvic floor.

demanding/extreme occupations–very physically demanding and challenging occupations that involve repetitive heavy lifting (e.g., fitness instructor, home removals, diver, tree surgeon, fire fighter, ski patroller, builder, and landscaper).

exercise–exercise is used to improve health, maintain fitness, and is important as a means of physical rehabilitation.

light occupations–occupations that are mostly seated, desk work using computer but can involve some standing and light tasks (e.g., telephone operative, administrator, executive, writer, programmer, computer user, and other mostly seated occupations).

modification–modification is a way to make an exercise easier, safer, or more appropriate for an individual at a given time.

physical activity–physical activity refers to all movement including during leisure time, for transport to get to and from places, or as part of a person's work or domestic activities.

physical occupations–a physical occupation refers to a job or role that involves physical exertion and requires physical demands from the worker. This includes tasks such as lifting, carrying, pushing, and other movements that are essential for performing the job. This could be paid or voluntary employment.

professional–any exercise, health care, or medical professional working with, advising, treating, or supporting an individual with a stoma (e.g., surgeons, specialist nurses, doctors, physiotherapists, general nurses, health care assistants, occupational therapists, therapy assistants, fitness trainers, Pilates instructors, and exercise specialists).

prone–prone means lying on front/face down.

strengths-based language–language that focuses on a person's abilities, talents, and resources, rather than their challenges. It can foster positive self-esteem, motivation, and resilience and can promote more effective personal development and progress. Using strengths-based language when communicating with individuals can positively impact their ability to recover and engage with physical activity.

supine–supine means lying on back.

Valsalva manoeuvre–a manoeuvre that increases intra-abdominal pressure by pressurising the abdominal cavity through a combination of diaphragm, abdominal, and pelvic floor muscle activity.

Abbreviations

APER	abdominoperineal resection
APPI	Australian Pilates and Physiotherapy Institute
ASCN UK	Association of Stoma Care Nurses UK
CRC	colorectal cancer
ERAS	enhanced recovery after surgery
EXPASS	EXercise and Physical Activity after Stoma Surgery
FAQ	frequently asked questions
HALT	Hernia Active Living Trial
LARS	low anterior resection syndrome
NHS	UK National Health Service
PFMT	pelvic floor muscle training
TPE	total pelvic exenteration
UK	United Kingdom
WHO	World Health Organization

EXPASS BEST PRACTICE RECOMMENDATIONS

The following are the recommendations formally agreed and voted on by the EXPASS Expert Panel. Each statement goes into further detail with more information and evidence throughout the rest of the document.

1. Actively promote the health benefits of exercise and physical activity for each individual preparing for and recovering from stoma surgery and for those living with a stoma.

2. Develop, in partnership with the individual, a personalised recovery and exercise pathway for each person.

3. Promote, when possible, appropriate physical prehabilitation to prepare each individual for stoma surgery.

4. Encourage and support timely postoperative mobilisation and movement appropriate for each individual.

5. Recommend suitable abdominal and pelvic floor exercises for all individuals having stoma surgery and living with a stoma.

6. Involve and educate, where appropriate, relevant professionals to support each individual, specifically with exercise and rehabilitation.

7. Encourage and support each individual, after appropriate physical rehabilitation, to return to or commence their chosen daily activities, lifestyle, and occupation.

8. Encourage and support active (including athletes) individuals, after specific physical rehabilitation, to return to or commence their chosen sports, fitness activities, competition, and physical occupations.

EXPASS

Exercise and Physical Activity After Stoma Surgery: Best Practice Recommendations

Providing personalised and empowering advice as well as practical interventions for exercise and physical activity to all individuals having stoma surgery should be an essential part of the stoma pathway

OVERARCHING PRINCIPLES

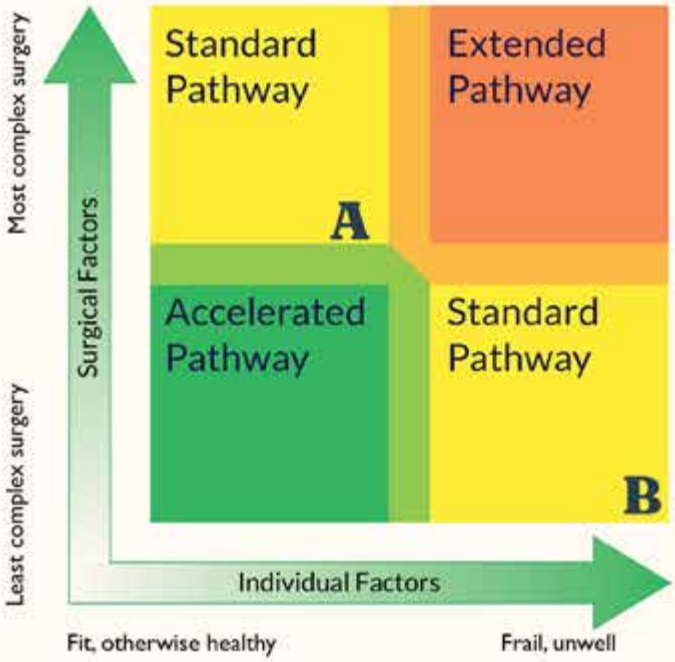
- Everyone needs personalised advice—one size does not fit all
- Specific core rehabilitation should be standard for everyone
- Exercise is safe and essential—focus on the can do
- Set people up for better quality of life with a positive mindset

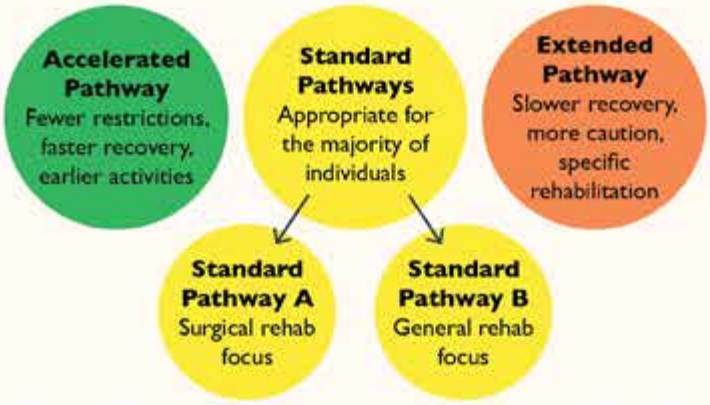
EXPASS BEST PRACTICE RECOMMENDATIONS

- Actively promote the health benefits of exercise and physical activity for each individual preparing for and recovering from stoma surgery and for those living with a stoma.
- Develop in partnership with the individual a personalised recovery and exercise pathway for each person.
- Promote, when possible, appropriate physical prehabilitation to prepare each individual for stoma surgery.
- Encourage and support timely postoperative mobilisation and movement appropriate for each individual.
- Recommend suitable abdominal and pelvic floor exercises for all individuals having stoma surgery and living with a stoma.
- Involve and educate, where appropriate, relevant professionals to support each individual, specifically with exercise and rehabilitation.
- Encourage and support each individual, after appropriate physical rehabilitation, to return to or commence their chosen daily activities, lifestyle, and occupation.
- Encourage and support active (including athletes) individuals, after specific physical rehabilitation, to return to orcommence their chosen sports, fitness activities, competition, and physical occupations.

USE THE EXPASS MATRIX

TO IDENTIFY A PERSONALISED RECOVERY PATHWAY FOR EACH PERSON





PROVIDE INDIVIDUALISED ADVICE

Scan QR code to full EXPASS best practice recommendation

Everyone should aim to meet **WHO** exercise guidelines of **150 min** per week, including **2 strength training** workouts

- Reduces risk of colorectal cancer recurrence by 30%
- Improves quality of life, independence, and mental well-being
- Reduces risk of other health conditions and comorbidities
- Potentially reduces risk of parastomal hernia

However, research shows that the majority of people with a stoma do not meet WHO guidelines for physical activity. Inactivity is harmful. Individuals should consider an active recovery approach, balancing intentional exercise with rest and recouperation.

PHYSICAL REHABILITATION IS REQUIRED FOR EVERYONE AND IS SPECIFIC TO THE INDIVIDUAL

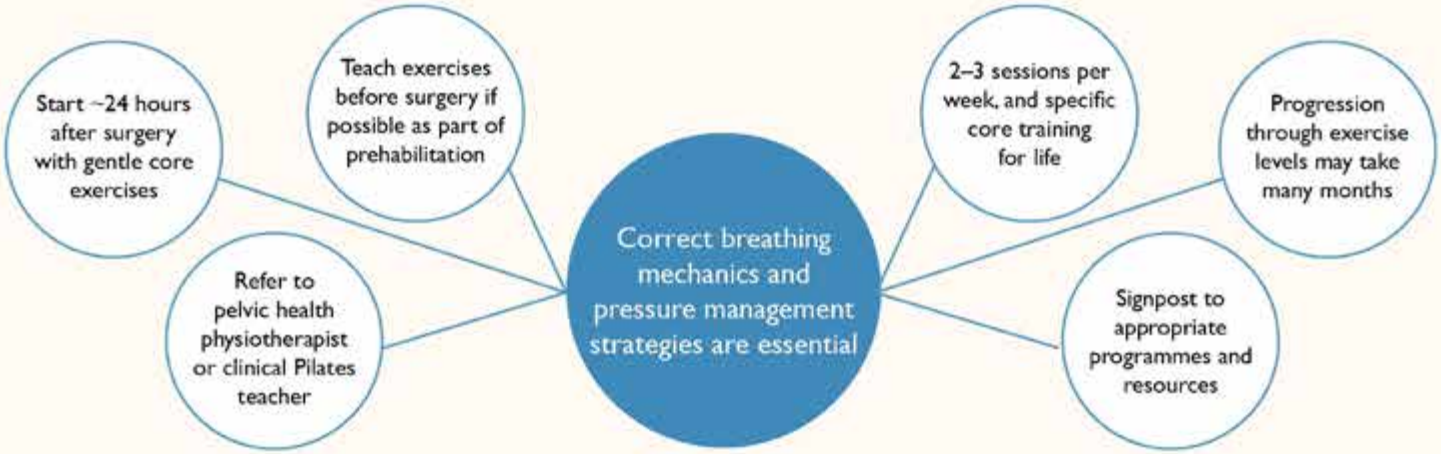
Strength and resistance exercises are important for the health of all individuals. Ensure appropriate build up and correct technique. Refer to applicable pathway.

Extreme sports and activities are possible in time. More rehabilitation is needed for more challenging activities.

Most people can return to normal activities after relevant rehabilitation. Timeline for recovery will differ for everyone.

Core rehabilitation is essential for everyone. Prehabilitate where possible. Start ~24 hours after surgery and follow pathway. Breathing mechanics and pressure management are key.

CORE REHABILITATION IS ESSENTIAL FOR EVERYONE



SELF-EVALUATION ASSESSMENT: SENSATIONS AND SYMPTOMS CHECKLIST DURING AND AFTER ANY ACTIVITY OR EXERCISE

- ✓ Ability to exhale and engage abdominals and pelvic floor with coordination
- ✓ Ability to inhale and relax abdominals and pelvic floor with coordination
- ✓ Feeling of coordination and control of abdominals and pelvic floor
- ✓ Ability and awareness to exhale on exertion/effort during an exercise or activity and engage abdominals
- ✓ No prolonged pain or muscle soreness after exercise around stoma
- ✗ Significant doming or bulging around stoma/general abdomen on exertion
- ✗ Feeling of pressure around stoma, pelvic floor, or rectum on exertion
- ✗ Excessive or unusual pulling/tugging around stoma area
- ✗ Prolapse of stoma during or after exertion
- ✗ Postexercise, excessive fatigue/soreness around stoma area or abdominals

Remember ... there is no one-size-fits-all. Timeline for recovery will differ for everyone. Move away from set timeframes and use EXPASS matrix to create individualised pathway.

Funding and copyright: The recommendations were funded by unrestricted educational grants from AMI Medical Ltd, Clinimed, Coloplast, Convatec, CUI International, Eakin, and Salts.

Reference: Russell S, Archer K, EXPASS Expert Panel. Exercise and physical activity after stoma surgery: best practice recommendations. Association of Stoma Care Nurses UK. 2025 Oct.

OVERARCHING PRINCIPLES AND ETHOS

Person-Centred Approach

A person-centred approach is central to the EXPASS recommendations. Everyone is different; therefore, they require different advice, support, and interventions specifically about exercise and physical activity. Consider the individual person; their medical and exercise histories; the surgical procedure; and their goals, lifestyle, and desires. There is no one-size-fits-all, and the EXPASS recommendations aim to address that issue. As everyone and every surgery is different, there can be no absolute on what individuals can or cannot do as part of rehabilitation exercises. Consequently, individuals must listen carefully to their body, learning to be self-guided based on sensations and symptoms.

A Guiding Framework

The EXPASS recommendations are intended to be a *guiding framework based on current evidence and experience*; they are not intended to be prescriptive nor to be followed blindly. Individuals should work with their professionals to develop their own recovery pathway and exercise journey based on their recovery, surgical procedure, and individual factors.

Exercise is Safe and Essential

Anyone living with a stoma should eventually be as physically active as they are able to and wish to. Exercise and movement should not be feared. Exercise should also be seen as an essential part of recovery and be embedded into standard care. However, balance is important. Specific core exercises are likely to reduce the risk of parastomal hernia development in the first place, and may help to prevent a hernia worsening. Core exercises are likely to have an essential role for all individuals. While individuals should not feel limited, some modifications and adaptations may be appropriate for some individuals or for different activities. Individuals need to understand the demands of various activities and the physical development requirement to do things safely.

Positivity, Mindset, Language, and Hope

Encouraging a positive mindset, where individuals can feel empowered and motivated, should be a priority for all professionals. Care should be taken over language, choice of words, and advice given to an individual at every stage of the stoma-surgery journey. Unintentional harm can be caused by overly cautious or negative language and advice, leading an individual to feel disabled by their stoma and unable to return to work, family life, and the activities that they love and are important to them.

Setting an individual up for success with consistent advice, individualised care, signposting, and relevant referrals can make a significant difference in their outcomes. The focus on long-term outcomes and quality of life should be paramount in the minds of professionals, and the advice and support individuals receive about exercise and lifestyle are fundamental for their long-term outcomes and quality of life.

Strengths-based language focuses on a person's abilities, talents, and resources, rather than their challenges. It can foster positive self-esteem, motivation, and resilience, promoting more effective personal development and progress. Using strengths-based language when communicating with individuals can positively impact their ability to recover and engage with physical activity. Examples are provided in Table 1.

> "Finding the confidence to move again has been vital to my mental and physical recovery. I now dance again which brings me so much joy."

Table 1

Examples of Strengths-Based Language

WHAT YOU SAY …	WHAT THE PATIENT HEARS …
You must avoid lifting	Lifting anything will damage me = FEAR
You have high risk of a hernia	That sounds bad (what's a hernia anyway?) = FEAR
Wear this support garment	I need to rely on something rather than my own body/muscles = DISABLEMENT
Be careful with exercise	I better not move (ever again) = FEAR and DISABLEMENT

INSTEAD SAY …	
When lifting, do it like this …	I can lift safely without hurting myself = ENABLEMENT
You can reduce your risk of a hernia by …	I have skills and knowledge to help myself = EQUIPPED and ENABLED
Do abdominal exercises to strengthen your own muscles	I can rely on my own body/muscles to support me = EQUIPPED and ENABLED
It is really important to exercise and here's how …	Exercise is important for my health and I know how to do it safely and appropriately = EMPOWERED

Note. Reproduced from Russell[4] with the kind permission of WCET® Journal.

Consider the following points:

- always lead with empathy and consideration for the experience of the individual;
- ensure all professionals within the team are giving the same advice to the individual and not contradicting each other;
- try to avoid bringing personal bias or negative experiences about exercise and activity into the relationship with the individual;
- remember to consider the whole individual (including their occupation, lifestyle, and cherished activities) and to prioritise the things that are important to them;
- provide balanced and informed education about parastomal hernia and risk-reduction strategies;
- focus on providing advice about things an individual can do to help themselves rather than things they should avoid; and
- help individuals to find solutions to problems and alternative ways to do things and to frame challenges with a growth mindset.

"When you wake up after surgery, realise that you have to start a many-faceted project to build the new you. It will take months and there will be setbacks, but you can do it."

HOW TO USE THE EXPASS RECOMMENDATIONS

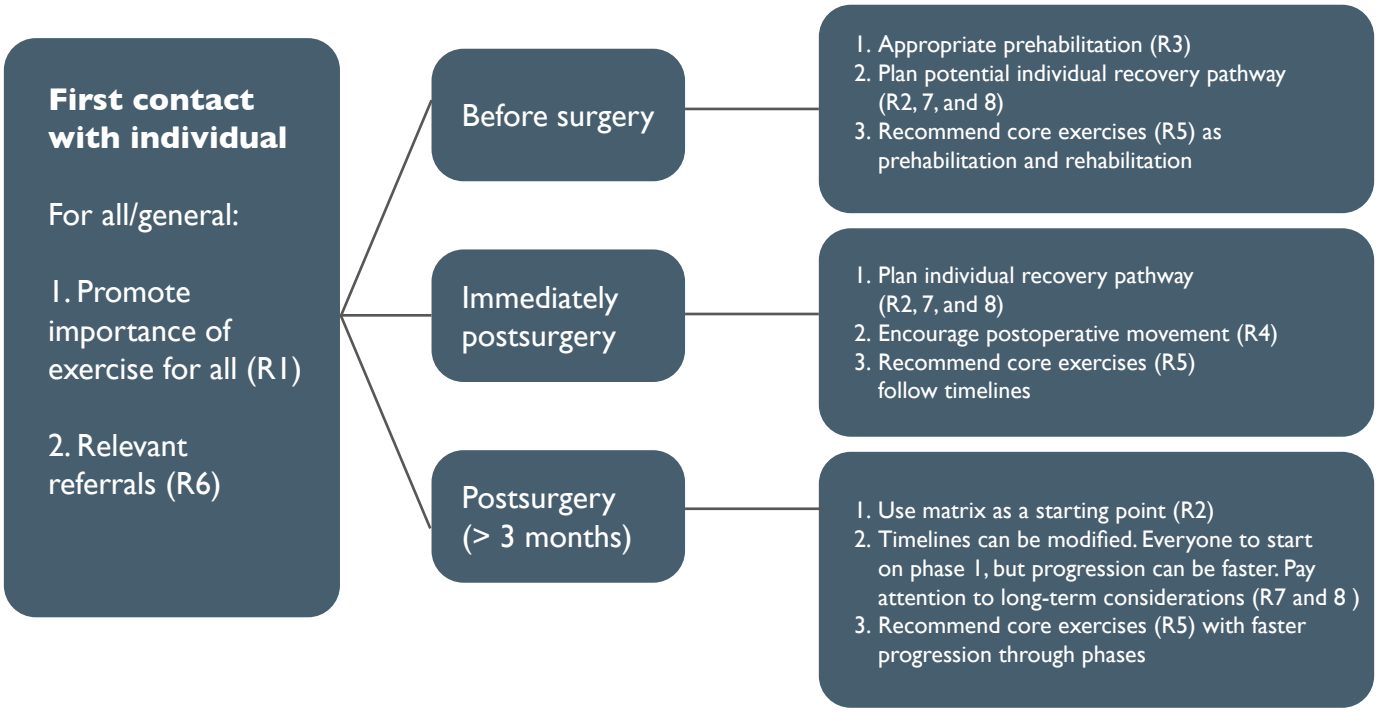
Use these tips to gain the most value from the EXPASS recommendations:

- These recommendations have been written for professionals working with individuals undergoing stoma surgery.
- Any individual having stoma surgery is also welcome to read and utilise these recommendations. If an individual is working with a physiotherapist or exercise professional, it is recommended to show them these recommendations so they can provide appropriate support.
- There are eight recommendations as formally agreed by the EXPASS Expert Panel.
- Additional detail of supporting evidence, explanation, and the rationale behind each recommendation (along with key practice points and practical implementation) is found throughout the document.
- There is a lot of detailed information, so refer to the relevant points as appropriate.
- The eight recommendations should be used collectively to form an individualised pathway and to advise the individual.
- It is anticipated that a wide range of professionals will refer to these recommendations, so the aim is to provide information in a way that is accessible for all, with some specifics that can be used by professionals to help support those with a stoma.
- Throughout these recommendations there are practice points specifically related to the area of expertise of various professionals caring for or working with individuals with a stoma.
- The recommendations can be referred to before, immediately after, and at any time after stoma surgery.

Figure 1 shows the possible touch points that professionals may have with an individual and the priority recommendations at each point.

Figure 1

How to Use the EXPASS Recommendations at Different Stages of Patient Contact



Note. R = recommendation by number.

RECOMMENDATION 1 – EXERCISE AND ACTIVITY FOR ALL

Actively promote the health benefits of exercise and physical activity for each individual preparing for and recovering from stoma surgery and for those living with a stoma.

Why

Exercise at recommended levels plays a significant role in reducing risk and complications of other health conditions and comorbidities. Physical activity is essential for health, well-being, and recovery from surgery. A critical finding from the review of literature is that most individuals with stomas are physically inactive. Physical inactivity is a common and concerning trend in individuals with a stoma. It is important to convey this recommendation to all individuals undergoing stoma surgery and to encourage the concept of physical activity for health.

How

Ways to put this into practice:

- individuals with a stoma should not be advised to avoid physical activity, but instead be actively encouraged to participate in appropriate exercise for their needs and goals;
- all individuals, including those with a hernia and going through challenging treatment, should be encouraged to engage in appropriate exercise and physical activity for the reasons mentioned; and
- all individuals should be given guidance on specific preparation for and recovering from surgery; returning to normal activities and employment; reducing the chancesof complications, including parastomal hernia; and adapting physically and mentally to living with a stoma.

Use this document in conjunction with other formal guidelines related to the professional occupation, including ASCN UK (or relevant country) clinical nursing guidelines and American College of Sports Medicine for exercise professionals.

Practice Points

The WHO guidelines are the minimum requirement for health benefits and are relevant for all adults. However, any amount of exercise and physical activity is beneficial and should be encouraged. Individuals should aim to do as much as they can given their health conditions, symptoms, and time available. Intentional exercise should be prioritised and be considered an essential element of recovery.

Specific tips for different users of this document:

- if you are a health care professional with limited exercise knowledge, refer to WHO guidelines and encourage the individual to seek support from an exercise professional using these recommendations[5];
- if you are a health care professional, an individual with exercise knowledge, or an exercise professional, support the individual in meeting the WHO guidelines and advise on appropriate strengthening exercises (using these recommendations); and
- if you are an individual with no exercise knowledge, please seek support from an exercise professional and show them these recommendations.

WHO guidelines recommended that all individuals engage in a minimum of 150 min of moderate physical activity, including two sessions of muscle strengthening exercise, per week.[5]

"Walking was one of the best things for my recovery, especially early on. Gradually increasing the distance really gave a feeling of progression. I would definitely say Pilates classes were then the key to really stepping it up. They really gave me confidence in terms of what I could and couldn't do."

RECOMMENDATION 2 – INDIVIDUALISED PATHWAY

Develop, in partnership with the individual, a personalised recovery and exercise pathway for each person.

Why

Every individual having stoma surgery is unique and there are many different reasons for stoma surgery. Consequently, there is no one-size-fits-all approach to preparation for and recovery from stoma surgery and there is no set timeline. An individualised approach for each person should be a fundamental principle for any advice, discussion, or recommendation.

How

Ways to put this into practice:

- where possible, each individual should be supported to have ongoing dialogue with a relevant professional about their recovery and exercise pathway. This should be a collaborative process with the needs and goals of the individual at the centre of the process, in line with the relevant expertise of the professional;
- avoid offering the same advice to all individuals, and move towards a more personalised approach, taking into account the individual's previous fitness level, surgical procedure, medical condition, lifestyle, and goals of the individual. We recommend suggesting appropriate flexible timelines for recovery rather than a strict fixed agenda. Aim to use positive advice, focusing on things an individual can do, rather than the things they should avoid;
- utilise relevant models and guidance tools such as the EXPASS matrix to guide and inform the recovery pathway and to form the basis of discussion and dialogue between the individual and professional. Explain clearly to each individual the extent and implications of their surgery and the reasons for their position on the EXPASS matrix; and
- discuss the general risk factors for parastomal hernia and those relative to that specific individual. Provide balanced, realistic, evidence-informed education about parastomal hernia as well as risk reduction and management interventions for an existing hernia. Provide positive, empowering advice regarding the likelihood of parastomal hernia, and avoid fear-inducing language, resources, and materials. Ensure the multidisciplinary team has a cohesive and consistent approach in the advice given, so the individual feels confident to follow advice given. The ASCN UK parastomal hernia risk assessment tool may be useful.

The EXPASS Matrix

How to use the EXPASS matrix in practice:

- The EXPASS matrix aims to develop the *concept of individualised person-centred care*.
- The matrix addresses the challenge that everyone is different and that the stoma is the outcome rather than the medical condition. There is no one-size-fits-all approach.
- The matrix is a *framework* intended to provide some *structure to the recovery and exercise pathway* for individuals having stoma surgery. *It is not a decision-making tool.* Individual factors should be prioritised.
- The matrix can be used to help the individual identify where they might sit on the framework as a *starting point* to the recovery journey pathway. Recognise that this position will change as the individual recovers after surgery.
- It is important that the individual understands the complexity of their surgery alongside their own individual condition and history. The matrix can be used during consultation and in discussion to enable this understanding.
- The matrix can be used at *any point along the stoma surgery journey from prehab to postsurgery*. It can be useful prior to surgery to plan a potential realistic recovery pathway. In the case of individuals who are further down the recovery pathway, use the matrix and pathways to focus on long-term considerations.

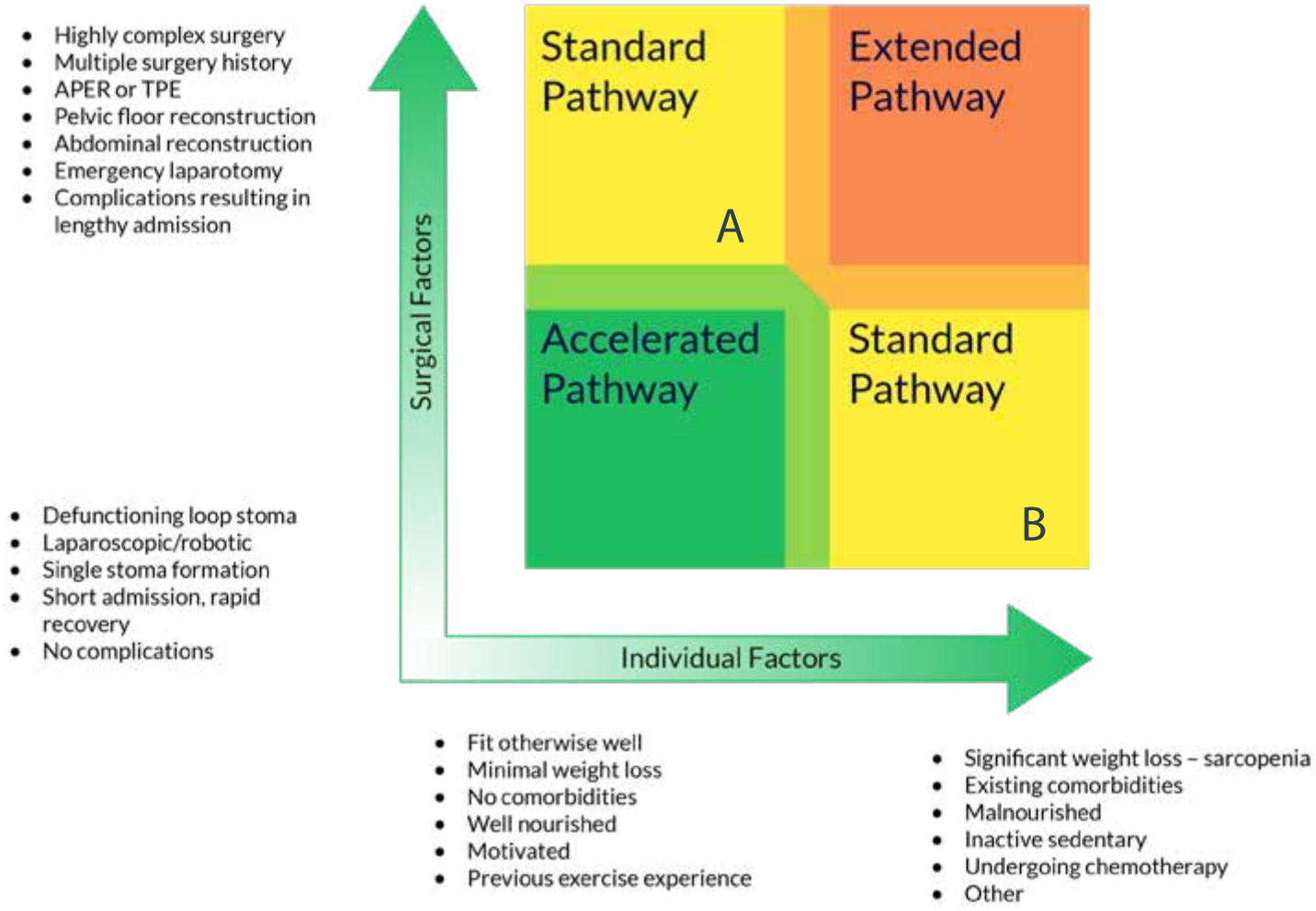
The EXPASS matrix (see Figure 2) is intended to guide the immediate postsurgery pathway. However, it is important to reinforce the concept that physical rehabilitation of some sort, especially the core, is required for everyone regardless of when they had surgery.

Individuals who are months or even years down the recovery pathway, still need to follow the same steps to learn the core exercise techniques of abdominal and pelvic floor muscle engagement, breathing mechanics, and pressure management strategies, and then progress as guided by the **Self-Evaluation Assessment Tool**. People who are not immediately postsurgery are likely to progress a little faster through the rehabilitation levels as healing has already taken place, but their goal is still to learn techniques and then strengthen muscle and tissue progressively over time.

Everyone should still be guided by the **Self-Evaluation Assessment Tool**, and priority should be placed on core and pelvic floor rehabilitation as the foundation for all other exercise and physical activity.

Figure 2

EXPASS Matrix Stoma Surgery Framework



Note. A = individual likely to have undergone more complex surgery, B = individual likely to be more deconditioned, frail, unwell, elderly; have had significant condition-related complications; or may have other comorbidities. APER = abdominoperineal resection, TPE = total pelvic exenteration.

The Standard Pathway (A and B) is likely to be appropriate for most people and has recommendations for three areas:

i. core exercises
ii. daily activities and occupations
iii. intentional exercise (sports/activities).

Standard Pathway A

Individuals in the top left quadrant of the EXPASS matrix are likely to have undergone more complex surgery. They may require more focus on specialist rehabilitation for the core and pelvic floor and may benefit from formal referral to a specialist pelvic floor physiotherapist. They may also require delayed (at least 3–6 months) return to repetitive high impact activities (e.g., running) or heavier lifting (where some straining is required) until full healing and tissue strength has been restored after full rehabilitation of the core and pelvic floor. Use the Pelvic Floor Distress Inventory Questionnaire - Short Form 20 illustrated in **Appendix 4 Assessment Tools** to identify any dysfunction or symptoms and use the self-assessment tool to guide progression through exercise and rehabilitation.[6]

Standard Pathway B

Individuals in the lower right quadrant of the EXPASS matrix are likely to be more de-conditioned, frail, unwell, elderly; or have had significant condition-related complications (weight loss through chemotherapy or inflammatory bowel disease); or may have other comorbidities. They are likely to require more generalised *condition-specific* rehabilitation, alongside additional core and pelvic floor exercises, to focus on rebuilding muscle strength, reducing symptoms of fatigue, mobility, and general fitness. Referral to a general physiotherapist or specific exercise professional is likely to be beneficial. Progression and any restrictions are more likely to be related to other conditions, not just the stoma.

There are additional recommendations for individuals who may be outside of the standard pathway.

Accelerated Pathway

Timeline is sped up and less restrictive for very fit and able individuals and those having less complex surgery.

Extended Pathway

Timeline is slowed down and more restrictive for those who are more frail and unwell and those having more complex surgery. Individuals in the Extended Pathway will require extensive rehabilitation and additional recovery time.

Figure 3 shows the three possible pathways–Accelerated, Standard, and Extended and the three areas of more detailed information.

Figure 3

Possible Pathways From the EXPASS Matrix

Note. Standard pathway includes two variants: A and B. A) top left quadrant of the EXPASS matrix indicates more focus on specific surgical rehabilitation. B) bottom right quadrant of the EXPASS matrix indicates more focus on condition-related/general rehabilitation.

Assessment Tools

Any relevant assessment tools can be used alongside the EXPASS matrix to identify additional needs of the individual. Assessment tools will be specific to the professional using them but could include any of the following (the list is not exhaustive, refer to **Appendix 4 Assessment Tools**):

- pelvic health dysfunction assessment (Pelvic Floor Distress Inventory Questionnaire - Short Form 20)[6];
- Clinical Frailty Scale (Rockwood)[7];
- hospital anxiety and depression scale (HADS);
- sit-to-stand test (five repetitions or 30 seconds);
- timed up and go test;
- single leg balance; and
- any other relevant screening or assessment tool as deemed appropriate.

Remember this is a framework, and it should be taken into consideration with the individual needs of the person. The intention is not to place people in boxes, but to provide a starting point and possible pathway. Use the pathways to guide and inform. Take relevant aspects from each pathway to provide guidance.

Practice Points

Specific tips for different users of this document:

- if you are a health care professional with limited exercise knowledge, spend time with the individual to help them identify where they may start on the matrix and either refer them to or advise them to seek support from an exercise professional using these recommendations;
- if you are a health care professional, an individual with exercise knowledge or an exercise professional, support the individual to identify where they may start on the matrix and give advice on appropriate exercises and activities (using these recommendations) and a timeline. Support with the **Self-Evaluation Assessment Tool** and how to use this to support with progression; and
- if you are an individual with no exercise knowledge, please seek support from your named health care professional (i.e., stoma nurse) to support you with identifying your start point on the matrix and then seek support from an exercise professional and show them these recommendations.

"Everyone starts from a different place physically. Progression is not always linear and you have to be patient. But there are really no limits to what you can do. Life has been SO MUCH better for me without my colon!"

RECOMMENDATION 3 – PREHABILITATION FOR ALL

Promote, when possible, appropriate physical prehabilitation to prepare each individual for stoma surgery.

Why

The concept of preparing for surgery is known as prehabilitation and is a fundamental component of enhanced recovery after surgery (ERAS). It is shown to improve surgical, physical and psychological outcomes and to reduce hospital stay and surgical complications. A programme of prehabilitation for individuals having stoma surgery can include different aspects of physical preparation which may include any of the following, (a) general fitness (cardiovascular and strength), (b) abdominal muscle function and breathing techniques, and (c) abdominal muscle tone and strength.

How

Ways to put this into practice:

- in all presurgery interactions, prioritise the benefits and need for prehabilitation and physical exercise. This is in addition to standard preoperative advice which may include information on nutrition, intimacy, mental health, and stoma management. Signpost to appropriate physical programmes (online or in person). For more information refer to **Appendix 5 Recommendations for Materials, Resources, and Referrals**;
- prior to surgery explain clearly the impact of their surgery and develop—using the EXPASS matrix—an individualised estimated timeline and pathway based on their prior fitness and other relevant factors, as a collaborative process. This should focus on positive things they can do to help themselves, rather than things they should avoid;
- introduce the topic of parastomal hernia if deemed appropriate for that individual, to begin education about hernia and management strategies;
- regardless of timeframe, for all individuals undergoing surgery involving the rectum and pelvic floor (abdominoperineal resection [APER], pelvic floor reconstruction, etc.), consider referral (or signposting) to a pelvic health physiotherapist or highly trained clinical exercise specialist / Pilates teacher with training in pelvic floor; and
- for all individuals (including those who have limited time prior to surgery), recommend and signpost to resources, programmes, and classes where they can learn breathing techniques, abdominal and pelvic floor exercises that they will do *after* surgery, and intra-abdominal pressure management strategies.

Table 2 shows recommendations for prehabilitation.

Table 2

Specific Prehabilitation Recommendations for Individuals Having Stoma Surgery

TIMELINE	FOCUS ON
Everyone – with time available from agreement to admission for surgery (include in patients)	• Learn and practice optimum breathing mechanics • Learn how to safely get out of bed / up from a chair • Learn and practice initial postsurgery exercises such as pelvic tilt and knee roll which can be commenced within 24 hours after surgery (refer to core exercises level 1)
Those who are able – including those having chemotherapy Utilise timeframe available, up to and including admission to hospital	Complete the recommendations for everyone and also the following: • Improve cardiovascular fitness by aiming to meet or exceed WHO recommendations (150 min of moderate exercise per week). If already fit, can do more and include HIIT sessions • Improve general muscle strength with at least 2 x sessions (30 min+) per week of resistance training aimed at increasing strength. Can be home or gym based. Examples include squats, lunges, press ups, etc. using bodyweight, weights, machines, or bands • Improve core muscle strength and muscle tone through specific core exercises / Pilates 2–3 x per week of 20–30 min. Learn good form and technique. Practice similar exercises that are planned for the postoperative phases (Appendix 7 Illustrated Core Exercises) to understand progressions and modifications

Note. HIIT = high-intensity interval training, WHO = World Health Organization.[5] EXPASS best practice recommendations

How much and what can be done will depend on several factors including:

- general well-being of the individual;
- their fitness history and ability to exercise;
- access to facilities or home equipment;
- understanding of and experience with the rehabilitation process and experience with physiotherapy;
- the presenting illness and any ongoing treatment, e.g., chemotherapy;
- how much time they have before their surgery; and
- access to organised prehabilitation services (typically colorectal cancer [CRC]).

Macmillan Cancer Society *Principles and guidance for prehabilitation within the management and support of people with cancer* offers general recommendations for surgical prehabilitation for people with cancer.[8]

Practice Points

Specific tips for different users of this document:

- if you are a health care professional with limited exercise knowledge, refer to WHO guidelines and encourage the individual to seek support from an exercise professional using these recommendations. If appropriate/available refer to specific prehabilitation programme;
- if you are a health care professional, an individual with exercise knowledge, or an exercise professional, support the individual in meeting the WHO guidelines and advise on appropriate exercises (using these recommendations). We would also recommend that individuals practice safe moving techniques (in/out of bed and safe lifting); and
- if you are an individual with no exercise knowledge, please seek support from an exercise professional and show them these recommendations.

"As long as you're not having emergency surgery, use every day prior to surgery to lose whatever weight you can and to improve fitness. Be honest with yourself about how fit and ready you are for surgery—and consider delaying surgery if you're not ready. With cancer, it's always a balance."

RECOMMENDATION 4 – EARLY MOBILISATION

Encourage and support timely postoperative mobilisation and movement appropriate for each individual.

Why

Individuals can experience muscle loss and significant physical deconditioning during the perioperative phase, as well as mental distress and fear avoidance. Postoperative mobilisation should be encouraged for each individual depending on their specific needs and recovery pathway. Early mobilisation improves confidence and independence, reduces hospital stay, and leads to earlier discharge.

Early mobilisation could involve the following: getting out of bed as soon as possible after surgery, walking the ward or around the hospital, using the stairs, getting in and out of a chair, chair sit-stand repetitions, calf raises, breathing mechanics exercises, gentle bed-based core / abdominal exercises, and other appropriate functional movements relevant to the individual.

How

Ways to put this into practice:

- incorporate as part of an existing ERAS pathway;
- empower individuals to commence daily activities using safe techniques. For more guidance, refer to **Appendix 6 Safe Moving and Lifting Techniques**;
- avoid advising people not to lift anything heavy and to rest for 6 weeks (or a set timeframe), but offer more individualised advice and support on *how* to lift and a more positive approach. For more information, refer to Table 6;
- teach each individual to use a side roll technique to get in and out of bed. If possible this should be taught prior to surgery. Refer to the ASCN UK YouTube Channel. This encourages independence and also reduces strain around stoma and other surgical wounds, thereby reducing risk of hernia and increasing early independent mobilisation;
- encourage individuals to track and monitor progress and symptoms using some sort of daily exercise diary or recording device/tool;
- in most cases, individuals will be able to get out of bed within the first 24 hr postsurgery and can then start to walk with any relevant aids, building up gradually until discharge;
- encourage, in line with ASCN UK recommendations,[9] specific breathing practice and other appropriate *core exercises* in Recommendation 5 which can be done in the bed or chair;
- introduce other exercises in the immediate postoperative phase, such as calf raises, sit stands, stair climbing, etc. If more appropriate, introduce bed-based mobilisation. This will help reduce muscle loss and improve confidence;
- consider modifying advice around support wear–see the position statement in section **Support Wear – EXPASS Position Statement**; and
- give balanced and individualised advice should on *lifting* in the postoperative phase. The evidence does not support placing a restriction of no lifting or recommending a specific weight limit or timeframe. This can potentially do more harm than good. Instead, provide balanced advice on how to lift items safely, implementation of breathing techniques and learning abdominal engagement. Each individual will need slightly different advice depending on their EXPASS matrix position. Educate individuals about intra-abdominal pressure management strategies, teach breathing techniques, and encourage abdominal and pelvic floor training to enable lifting. Refer to the ASCN UK YouTube Channel EXPASS. If this is beyond your scope of practice or skillset, refer the individual to an appropriate specialist who can support them.

For more information, refer to **Appendix 6 Safe Moving and Lifting Techniques** with additional guidance on the correct technique for getting in and out of bed, lifting, and getting on or off the floor.

> "I would recommend anyone with a stoma to take the time to feel confident first of all with the skills of breath work and finding their core, to encourage comfort and safety in exercise. I started off wearing a support belt and support pants on all exercise, but after about six months, I now don't feel the need to wear them."

Practice Points

Specific tips for different users of this document:

- if you are a health care professional with limited exercise knowledge, signpost the individual to **Appendix 6 Safe Moving and Lifting Techniques**;
- if you are a health care professional, an individual with exercise knowledge, or an exercise professional, demonstrate to the individual and if possible observe the individual while performing these movements, including using their breath to manage intra-abdominal pressure. Spend time discussing activities of daily living and cues to help the individual manage activities of daily living, particularly in the early days after surgery; and
- if you are an individual with no exercise knowledge, please seek support from your named health care professional or an exercise professional and show them these recommendations.

RECOMMENDATION 5 – CORE EXERCISES

Recommend suitable abdominal and pelvic floor (core) exercises for all individuals having stoma surgery and living with a stoma.

Why

Abdominal surgery creates the need to implement specific rehabilitation for the core muscles, to restore function and strength. Healthy function, strength, control, and tone of the core muscles are important for recovery, return to normal activities, lifestyle, and occupations, and may reduce the risk of developing a hernia or prolapse. The ability to manage and regulate intra-abdominal pressure is likely to be a key part of long-term management of a stoma. The process of intentional rehabilitation for the core muscles also aims to restore confidence and reduce fear avoidance about movement and exercise.

How

Each individual should be made aware of the requirement of appropriate structured core muscle exercises which can be commenced within 24 hr (or as soon as possible) after surgery.[10,11] Beginning these exercises as soon as possible after surgery (during the initial healing phase) may be beneficial to aid tissue healing and recovery.

The focus should be on restoring function, timing, and coordination of the core muscles through correct breathing mechanics and specific core exercises. Refer to the ASCN UK YouTube Channel EXPASS. The ability to manage and regulate intra-abdominal pressure is a key requirement and may reduce the risk of parastomal hernia.

When an individual has mastered the timing and coordination of their core function, they can then progress to exercises that are aimed at increasing muscle strength and endurance and eventually progress to more familiar fitness core exercises. Initially these exercises are similar to postnatal exercises or programmes aimed at addressing diastasis recti, pelvic organ prolapse, or pelvic health issues and are based on principles of clinical Pilates or pelvic health physiotherapy. For some individuals, commencing these exercises may be delayed for a variety of reasons, in which case they should be advised to start when they feel ready and not placed under undue pressure. This can be weeks or months later, and it is never too late to start and benefit. Regardless of when someone commences core exercises, they should still start at the very beginning with breathing and level 1, but to expect faster progressions through the levels due to healing having already taken place. Tips on putting this into practice:

- explain clearly what these exercises are, how to execute them correctly and safely, and the progressions involved at various stages of recovery. Individuals may need coaching/instruction. Some individuals with exercise history may be self-guided and learn and practice using online videos and materials;
- place a greater focus on pelvic floor rehabilitation after complex surgeries (APER, pan-proctocolectomy, and involvement of the pelvic floor) or those expecting reversal surgery. Consider a referral/recommendation to see an exercise professional or physiotherapist with pelvic floor expertise;
- remember that each individual will have a different timeline, as determined by the EXPASS matrix. Progressions through specific exercises should be made in line with the pathway, but also by each individual's results using the **Self-Evaluation Assessment Tool** and the knowledge and expertise of any professional working with them. Refer to Table 3 and **Appendix 7 Illustrated Core Exercises**;
- emphasise that any postsurgery core exercise programme is a progressive process, where exercises will increase in challenge and demand as the individual recovers and becomes stronger. It is likely that most individuals will benefit from maintaining a specific abdominal rehabilitation exercise regime for the rest of their life. Participation in appropriate Pilates practice (or similar) 2–3 times per week is highly recommended;
- teach the individual, within the scope of the professional, the specific exercises and ensure that they are doing them correctly (refer to an exercise professional or physiotherapist with expertise to assess and teach the exercises);
- signpost to an appropriate service/professional or to relevant materials/videos and booklets. An appropriate professional is likely to be a pelvic health physiotherapist, clinical Pilates teacher, or an exercise specialist with knowledge of stomas. For more information refer to **Appendix 5 Recommendations for Materials, Resources, and Referrals;**
- remember that the exact prescription of repetitions, sets, duration, and times per week for core exercises will differ
- between individuals. There is no one-size-fits-all. Use the general principles of rehabilitation as a guiding process and be self-guided;
- note that the exercises listed in **Appendix 7 Illustrated Core Exercises** are given as examples and are based on Australian Physiotherapy & Pilates Institute (APPI) clinical Pilates methodology. There is no one-size-fits all and alternative (similar) exercises may also be appropriate for an individual. When choosing or teaching any specific exercise, be sure to focus on correct form and technique and use the **Self-Evaluation Assessment Tool**;

- use the **Self-Evaluation Assessment Tool** as the overarching guiding principle for all core exercises to structure progression, choice of specific exercise, number of sets and repetitions, and any modifications needed;
- maintain correct form during core exercises, especially as they increase in challenge. Exhale at the point of effort or exertion and avoid breath holding (or engaging a Valsalva maneouvre or feeling of *bearing down* or creating excessive intra-abdominal pressure). Refer to the specific sensations and symptoms in **Self-Evaluation Assessment Tool** to support correct technique and execution of each exercise; and
- inform individuals that lying on their stoma (face down in a prone position) is safe and unlikely to cause any harm. They do not need to be advised to avoid lying on their stomach for exercise, medical procedures, massage, or other reasons. This is the case for all types of stomas including urostomies. There is no actual contraindication to lie prone on the abdomen. Ultimately, however, this can be a personal choice. Individuals should make their own decision about lying on their stomach depending on personal comfort.

Practice Points

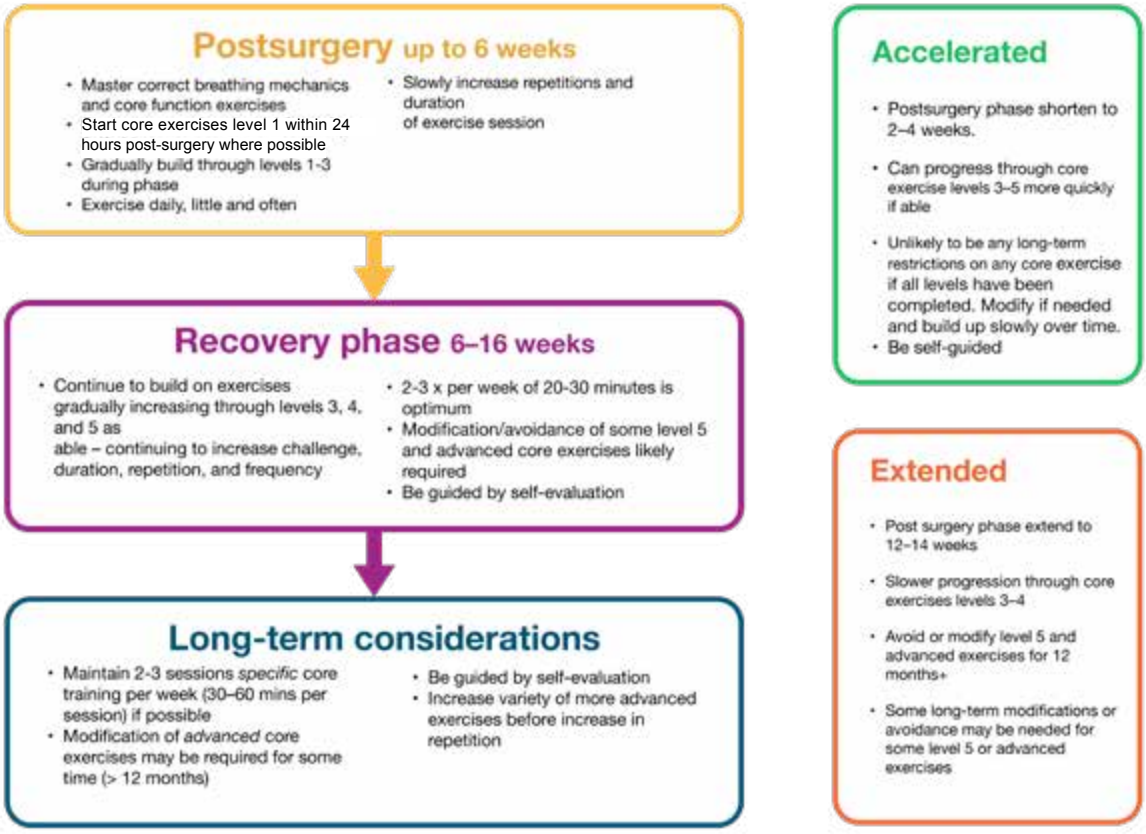
Specific tips for different users of this document:

- if you are a health care professional with limited exercise knowledge, refer to the example exercises and resources given in these recommendations and encourage the individual to seek support from an appropriately trained exercise professional (clinical Pilates trained or equivalent) using these recommendations;
- if you are a health care professional, an individual with exercise knowledge (specifically in pelvic floor and clinical Pilates), or an exercise professional (with appropriate training), teach the individual how to do the exercises at each level and assess their ability to support progression; and
- if you are an individual with no exercise knowledge, please seek support from an exercise professional (preferably clinical Pilates trained or equivalent) and show them these recommendations.

Figure 4 shows the standard pathway for core exercise recommendations, with additional recommendations for accelerated and extended pathways.

Figure 4

Core Exercise



Note. Refer to Table 3 for levels. Timelines are approximate. The **Self-Evaluation Assessment Tool** should guide progression.

Table 3 shows examples of core-specific exercises to illustrate increasing level and challenge. It is not exhaustive and names of exercises are given as examples. Individual factors such as technique, ability, fitness, strength, previous experience, and body awareness should all be taken into account and may impact progression and ability to execute exercise correctly.

Getting on and off the floor safely is essential. For more guidance, refer to **Appendix 6 Safe Moving and Lifting Techniques.**

Extended Information on Alignment and Breathing Mechanics

An individual needs to be able to master breathing mechanics prior to engaging in more challenging exercises. This enables all the muscles of the pelvic floor and core shown in Figures 5 and 6 to work together, regulating intra-abdominal pressure and enabling the diaphragm and pelvic floor to interact correctly.

In practice this involves the following:

- ensure that the diaphragm is naturally aligned over the pelvic floor in a standing position, with good posture and alignment of the spine and shoulders;
- have a relaxed upper body and shoulders and good thoracic mobility;
- expand the ribs and abdomen when inhaling;
- contract the ribs and abdomen when exhaling, using the muscles of exhalation including the obliques;
- create tension and contraction of the deep abdominal muscles (transverses abdominis and pelvic floor as a cocontraction) when exhaling;
- avoid overuse of upper abdominals;
- ensure cocontraction of pelvic floor and deep core muscles when exhaling; and
- seek advice and coaching from an appropriate exercise professional if needed.

Refer to the ASCN UK YouTube Channel EXPASS.

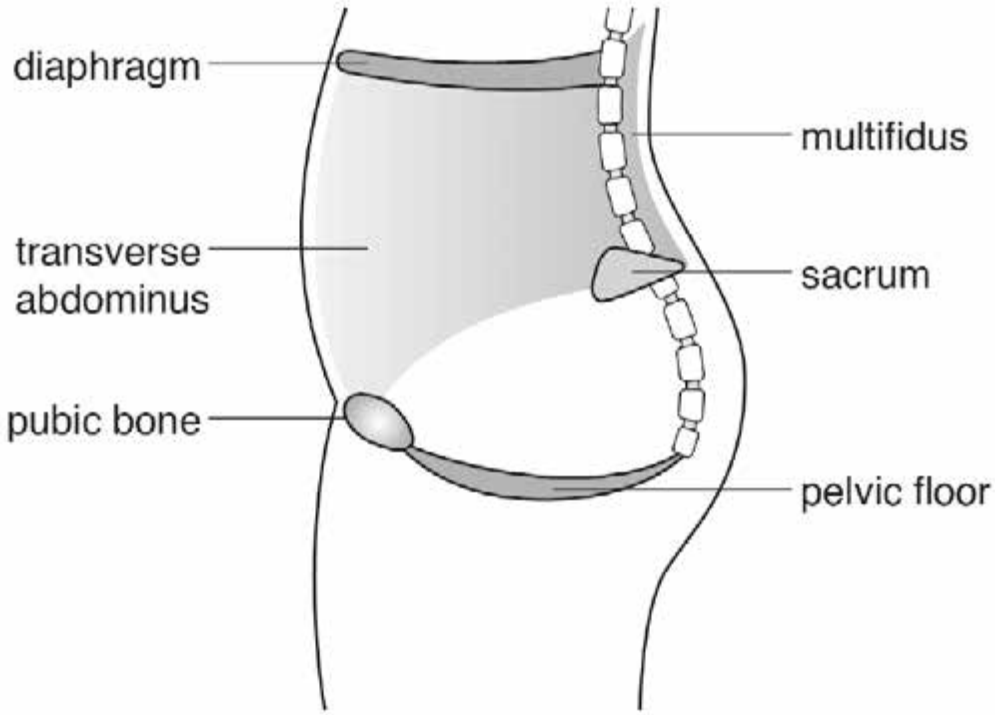
Figure 5

Muscles Supporting the Pelvic Floor

Note. Russell [12] reproduced with permission of Hammersmith Health Books.

Figure 6

Core Muscles



Note. Russell [12] reproduced with permission of Hammersmith Health Books.

Table 3 provides a general guide to show increasing demands of specific abdominal and core exercises. It is not exhaustive and other similar exercises may also be appropriate. Use the **Self-Evaluation Assessment Tool** as a guide for progression and appropriateness. If you are not sure what these exercises entail, then speak to an exercise professional.

Illustrations of some core exercises for the respective levels are shown in **Appendix 7 Illustrated Core Exercises**. These exercise names are based on APPI definitions. Exercises may be known by different names and definitions. The exercises here are given as examples, and other similar exercises are also likely to be suitable. The key point is to identify exercises that offer progressive levels of challenge and that can be modified or adapted. Signpost to programmes from me+recovery, Fittleworth, and Clinimed, which follow similar principles and progressions. Refer to **Appendix 5 Recommendations For Materials, Resources, And Referrals** for descriptions and links.

Table 3 is more likely to be relevant and useful to exercise professionals and physiotherapists. Health care professionals without exercise training are not expected to teach individuals these exercises or know what they are. If you do not know what these are, then do not worry, simply refer on.

> "Core work is so important. I use Pilates and can now perform various kinds of crunches. I'm still careful using weights with ab work through and generally use planks and other variations. Ballet gives you a lot of standing core work too."

Table 3

Examples of Core-Specific Exercises

LEVEL	EXAMPLES OF CORE-SPECIFIC EXERCISES BY LEVEL
1	Breathing mechanics (supine, side, seated, and standing). Knee rolls, single leg slide, pelvic tilt, overhead reach, and knee drop **Exercises in this level will always keep both the head and feet in contact with the surface.**
2	Breathing mechanics (quad position). Single knee lifts (scissors), bridge, cat/cow, knee drop (single leg 90/90), pelvic tilt in quad, one leg stretch, overhead reach + leg slide, seated knee lifts, standing calf raises, and mini squats **Exercises in this level will usually keep head down but ONE foot may lift at a time.**
3	90/90 tabletop, dead bug, abdominal prep (curl up) with straight legs, leg stretch from 90/90, modified plank (on knees long arm), side plank on knees, and side knee drop from 90/90 **Exercises in this level may involve a small head lift OR both feet lifted into 90/90 tabletop, but NOT both head and feet together. Modify using a Pilates ball or bands for support.**
4	90/90 tabletop with head lift, half roll back, long arm plank (no hold), bear/hover plank, oblique curl, and side plank on feet **Exercises in this level may involve a small head lift OR both feet lifted into 90/90. Occasionally lift both head and feet together for short duration. Modify using a Pilates ball or bands for support.**
5	Plank long arms, plank variations (with knee drop), full roll up and down (supine), oblique bicycling, curl ups, 100s, and farmer's walk **Exercises in this level may involve lifting both head and feet at the same time for a longer duration. Modify using a Pilates ball or bands for support.**
ADVANCED	Planking (on elbows, long duration), Russian Twists, V sits, anchored feet sit ups, straight leg lower/lifts (on back), hanging knee lifts, hanging straight leg lifts, crunch machines in gym, prone roll out on ball/sliders or wheel, and wood chop (cable or weight) **Some may NOT be appropriate for an individual. Use the Self-Evaluation Assessment Tool.**

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RECOMMENDATION 6 – MULTIDISCIPLINARY TEAM APPROACH

Involve and educate, where appropriate, relevant professionals to support each individual, specifically with exercise and rehabilitation.

Why

It is acknowledged that advice and education around exercise and physical activity with a stoma is lacking in many professions, therefore sharing knowledge and education between peers should become a priority. It is recognised that individuals undergoing stoma surgery will engage with a wide range of relevant professionals during their treatment and surgical journey; therefore, a multidisciplinary approach is important. Seek to involve, collaborate with, and educate**.** Consistency between health care and medical professionals providing advice/recommendations should be priority.

How

Ways to put this into practice:

- develop a multidisciplinary team approach to supporting individuals having stoma surgery, including (but not limited to), physiotherapists, occupational therapists, surgeons, anaesthetists, dieticians, specialist colorectal nurses, specialist stoma nurses, general nurses, exercise specialists, ERAS, and preoperative nurses. Ensure a cohesive and consistent approach in the advice given about parastomal hernia so the individual feels confident to follow advice given (where everyone gives the same advice and signposts to the same information);
- identify and engage with community, local, or online individuals, resources, and programmes that provide prehabilitation, recovery exercises, and abdominal rehabilitation. Provide the individual with leaflets, links, and relevant resources and information. For more information refer to **Appendix 5 Recommendations for Materials, Resources, and Referrals**;
- develop a directory and network of relevant professionals both within the UK NHS and private providers and encourage individuals to seek advice and support where they so wish;
- provide training to colleagues and share resources so that the individual undergoing stoma surgery is fully supported. **Ensure consistency of advice giving** between all professionals involved. Encourage the individual to share their **personal recovery pathway plan** with all relevant professionals; and
- consider nominating or identifying a key person within each team to coordinate dissemination of the recommendations, ensuring all the multidisciplinary team are aware of it.

Practice Points

Create communities, groups, and peer support for other professionals to support, educate, and collaborate. Specific tips for different users of this document:

- if you are a health care professional with limited exercise knowledge, seek support from the multidisciplinary team and, if possible, an exercise professional to develop a local pathway that includes referral to appropriate local professionals/services using these recommendations;
- if you are a health care professional, an individual with exercise knowledge, or an exercise professional, support the rest of the multidisciplinary team in developing a local pathway that individuals can be referred in / signposted to; and
- if you are an individual with no exercise knowledge, please seek support from your multidisciplinary team and ask about local professionals/services that can support you using these recommendations.

Note. For referral to / recommendation of exercise specialists and physiotherapists, there is a wide range of training and experience in exercise professionals and physiotherapists, so when referring or recommending a professional to work with an individual with a stoma, ideally find a professional with skills or additional training in clinical Pilates / core rehabilitation, postsurgical rehabilitation, cancer rehabilitation, exercise in special populations, postnatal recovery, or pelvic health.

> "Even though my stoma nurse in hospital was amazing, my aftercare was very wishy washy. The fear of God was put into me regarding exercise, 'be careful' and 'just use really light weights' is not helpful. Fortunately, I have worked in fitness and even qualified as a [physio] after my operation, I was able to build myself back up and listen to my body using the tools I had at my disposal."

RECOMMENDATION 7 – RETURN TO DAILY ACTIVITIES

Encourage and support each individual, after appropriate physical rehabilitation, to return to or commence their chosen daily activities, lifestyle, and occupation.

Why

Consider the whole person, their occupation, lifestyle, hobbies, and any activities that are important to them. The goal for everyone should be to return to a level of activity they had before their stoma surgery or more, and they should have the belief that is possible. In most cases, individuals with a stoma should (after appropriate rehabilitation and training) be able to return to any previous activities, lifestyles, and occupations. Modification of some activities may be required. For more information, refer to **Self-Evaluation Assessment Tool**. Appropriate rehabilitation may involve a combination of core, strength, and conditioning and cardiovascular exercises. The amount of each aspect of exercise will depend on the individual's needs, goals, and EXPASS matrix position. Rehabilitation should be seen as a necessary part of recovery and return to normal life.

How

Ways to put this into practice:

- educate each individual about the need to progress through appropriate rehabilitation following their surgery. This should include specific exercises for their abdominal and pelvic floor muscles as well as the whole body to restore function and strength, in order to return to normal daily living. Appropriate rehabilitation should be encouraged for everyone and is not limited to active or athletic individuals;
- use the EXPASS matrix or other similar tools to determine the recovery pathway and timeline for each individual. Maintain a collaborative and flexible dialogue between the individual and the professional;
- refer or recommend relevant fitness professionals, physiotherapists, or other group classes, programmes, etc. that focus on relevant recovery and rehabilitation (cancer exercise classes and programmes, stoma rehab programmes, etc.). These can be online, virtual, in person, group, or 1:1 depending on the individual's needs, situation, and availability;
- give balanced and individualised advice on *lifting* in the postoperative phase. The evidence does not support placing an outright restriction on lifting in general or implementing a specific weight limit or timeframe (i.e., do not lift anything heavier than 2 kg for 6 weeks). Instead provide balanced advice on how to lift items safely, to implement breathing techniques, and to learn abdominal engagement. Each individual will need different advice depending on their EXPASS matrix position. Educate individuals about intra-abdominal pressure management strategies, teach breathing techniques, and encourage abdominal and pelvic floor training to enable lifting;
- acknowledge the use of support garments as an individual decision following an informed discussion with the individual and the health care or medical professional. For more information, refer to **Support Wear – EXPASS Position Statement**; and
- provide balanced, realistic, evidence-informed education about parastomal hernia; risk reduction and management of an existing hernia; or what to do if one develops. Discuss with each individual the general risk factors for parastomal hernia and those relative to that specific individual related to the activities they wish to engage in. Provide education about abdominal and pelvic floor muscle exercises and the role in parastomal hernia risk reduction.

Practice Points

Specific tips for different users of this document:

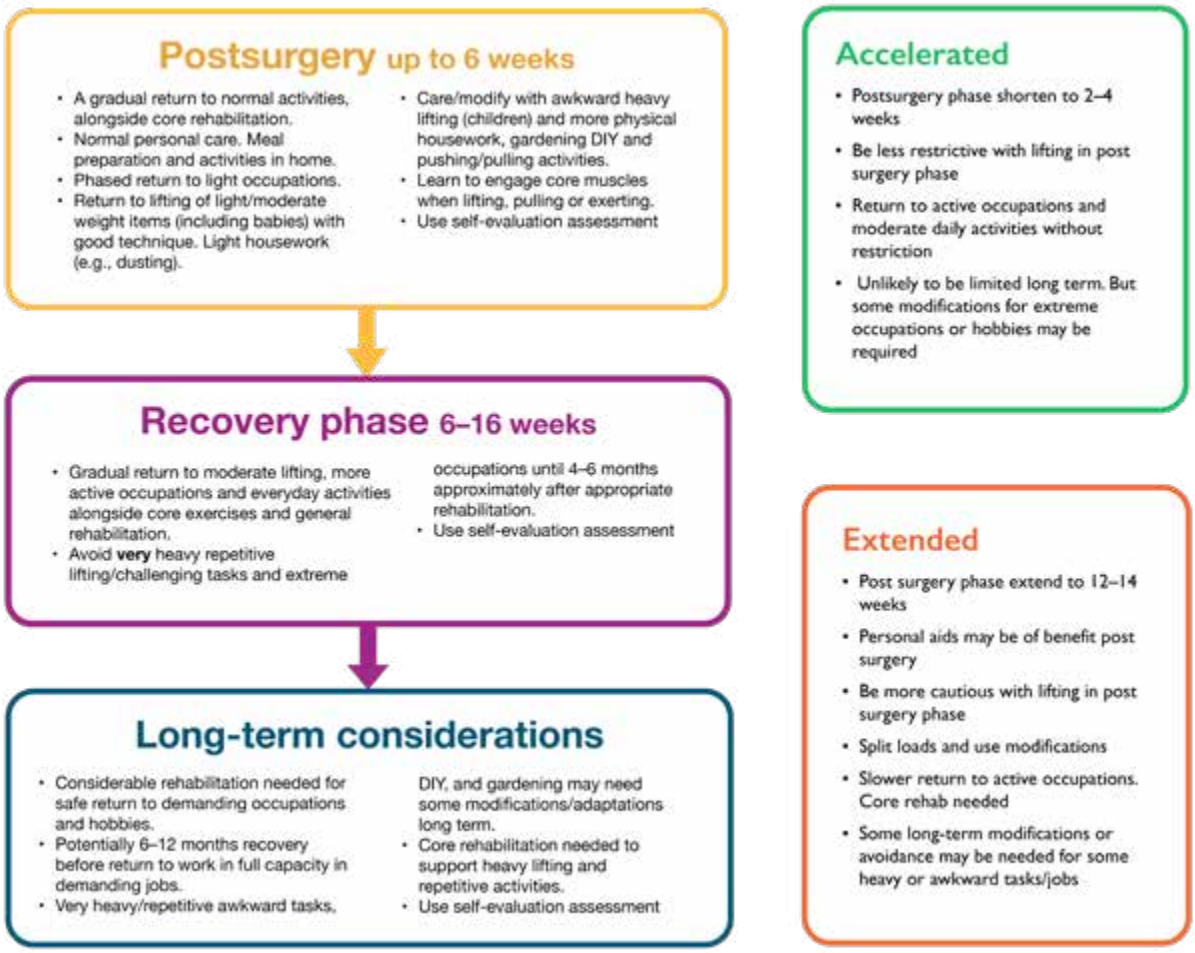
- if you are a health care professional with limited exercise knowledge / rehabilitation experience, encourage the individual to seek support from appropriate professionals regarding their occupation (i.e., occupational therapist), sexual activity (i.e., pelvic health physiotherapist), and daily activities / lifestyle (i.e., exercise professional) and to use these recommendations to support their rehabilitation journey;
- if you are a health care professional, an individual with exercise knowledge / rehabilitation experience, or an exercise professional, support the individual to return to their desired occupation/activities. Ensure discussions take place with the individual to establish a clear understanding of their short- and long-term goals and seek support from professionals, if required; and
- if you are an individual with no exercise knowledge, please seek support from your multidisciplinary team who will support you to identify appropriate professionals depending on your occupation and activity goals.

> "So certainly adaptations since the stoma and definitely these are as much about the pelvic floor as the stoma. Everything is now much more controlled. Every action and movement feels thought through and less spontaneous."

Figure 7 shows the standard pathway for typical occupations and daily activities, with accelerated and extended modifications.

Figure 7

Daily Activity and Occupation



Note. *Timelines are approximate. **Self-Evaluation Assessment Tool** should guide progression. DIY = do-it-yourself.

Occupation Definitions

Light occupations–occupations that are mostly seated, desk work using a computer but can involve some standing and light tasks. Common examples include:

- telephone operative;
- administrator;
- executive;
- writer;
- programmer;
- computer user; and
- other mostly seated occupations.

Active occupations–occupations that involve light/moderate lifting, lengthy periods of standing, carrying loads, or repetitive pushing or pulling. Common examples include:

- teacher;
- health care professional (nurse, physiotherapist, or surgeon);
- caregiver;
- warehouse operative;
- delivery driver;
- gardener;
- shop worker; and
- hairdresser.

Demanding/extreme occupations–very physically demanding and challenging occupations that involve repetitive heavy lifting. Common examples include:

- fitness instructor;
- home removals;
- diver;
- tree surgeon;
- firefighter;
- ski patroller;
- builder; and
- landscaper.

Table 4 shows the progressive demands of various daily activities and occupations from low to high. High demand activities require full recovery, rehabilitation, and core strength.

Table 4

General Examples of Daily Activities and Occupations

General examples of daily activities / occupations showing increasing in challenge/load specific to core / abdominal wall, from lowest demand to highest demand
Light occupations, seated hobbies and activities, and self-care Dog walking (with caution if dog pulls/startles) light housework (washing, dressing, and making light meals, meal preparation and cooking, washing up, and ironing)
Active occupations, light DIY and gardening jobs (pruning, using a garden hose for watering, using a trowel, planting, and ride on mower) Moderate housework (sweeping floor, vacuuming, light laundry, changing bed, washing windows, lifting moderate laundry loads) and moderate DIY and gardening jobs (digging, raking, push mower, heavier lifting [buckets of water],climbing ladders, and building/lifting furniture)
More demanding or extreme occupations and heavier DIY and gardening jobs Demanding DIY and gardening jobs (using chainsaw, chopping wood, heavy lifting/carrying extremely heavy loads, moving pots and planters, laying paving, heavy digging, and heavy wheelbarrow)

Note. This only serves as a general guide to show increasing demands of various activities. It is not exhaustive. Individual factors such as technique, ability, fitness, strength, previous experience, and body awareness should all be taken into account. DIY = do-it-yourself.

RECOMMENDATION 8 – RETURN TO EXERCISE AND SPORT

Encourage and support active (including athletes) individuals, after specific physical rehabilitation, to return to or commence their chosen sports, fitness activities, competition, and physical occupations.

Why

Individuals who engage in more formal sports, competition, fitness training, and athletic activities need to know they can return to those important activities at a level they were at before. Usually these activities are important for their health, mental well-being, social interactions, and personal identity. Individuals should not be discouraged or cautioned. There is no set timeline for return to various activities/sports, as everyone is different depending on their EXPASS matrix pathway and the demands of their activities/sports. Most individuals will need a lengthy and progressive period of specific rehabilitation to return to extremely challenging activities/sports. No activity/sport is absolutely contraindicated if appropriate rehabilitation has been done.

How

Ways to put this into practice:

- anticipate a specific (to the demands of the activity/sport) period of appropriate rehabilitation and training; this will need to be emphasised and supported. In some cases, a period of a number of years may be realistic. A referral or recommendation to an exercise professional with knowledge of stomas should be put in place;
- provide positive advice about how and what an individual can do and move away from negative advice which can be unnecessarily restrictive. Advise that some modifications in some situations may be needed, but to promote the rehabilitation process as a priority and how each individual with have a different pathway and timeline, depending on their EXPASS matrix position;
- focus initial rehabilitation on specific abdominal muscle and pelvic floor exercises. It is expected that individuals who will be engaging in highly challenging activities/sports will need to progress to an advanced level of abdominal exercise training, after following a progressive programme. They will then likely benefit from abdominal training for the duration of their life;
- focus general rehabilitation on strength and conditioning relevant to the demands of the activity/sport, but also the individual's needs, recovery, and surgery impact. Using the EXPASS matrix and recommendations will help to guide the professionals involved and the individual as they plan their recovery pathway. It is vital that each individual fully understands the implications of their surgery and the process of correctly progressed recovery as they return to activity/sport;
- acknowledge the use of support garments as an individual decision following an informed discussion with the individual and the health care or medical professional. For more information, refer to **Support Wear – EXPASS Position Statement**;
- provide education on the concepts of progression and modification, what this means, and how an individual can learn how to self-evaluate as they move through the postoperative phase, through recovery, and eventually to their chosen activities/sports. For more information, refer to **Self-Evaluation Assessment Tool**. Advice on monitoring pain, symptoms, exercise technique, and using various tools and assessments is key. Advice should be sought from an experienced professional with exercise knowledge; and
- provide balanced education about the general risk factors for parastomal hernia and those relative to that specific individual related to the activities/sports they wish to engage in. Provide education about abdominal and pelvic floor muscle exercises and the role in parastomal hernia risk reduction, specific to their chosen activities/sports. Liaise with professional with a knowledge and understanding of stomas and hernias to provide modifications and adaptations where needed and appropriate.

Practice Points

Specific tips for different users of this document:

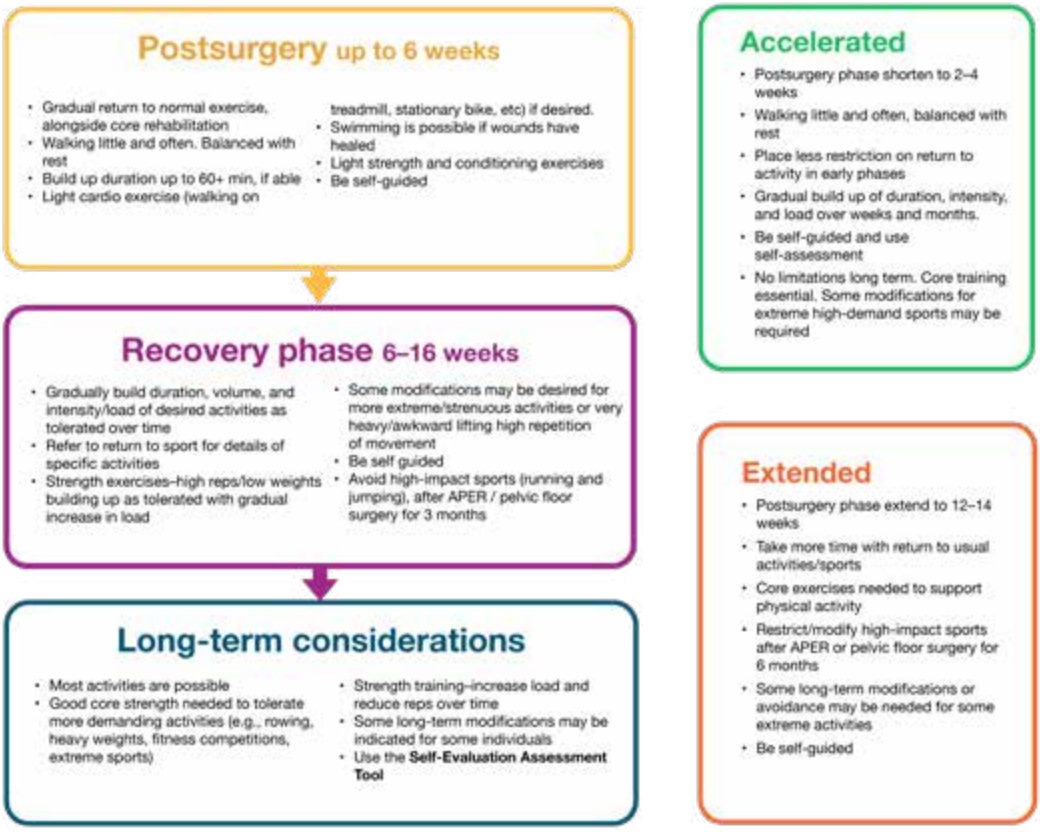
- if you are a health care professional with no exercise knowledge, encourage the individual to seek support from an exercise professional using these recommendations;
- if you are a health care professional, an individual with exercise knowledge, or an exercise professional, support the individual to return to or commence activity/sports, ensuring you teach activity/sport-specific exercises that will allow the individual to participate safely; and
- if you are an individual with no exercise knowledge, please seek support from an exercise professional and show them these recommendations.

Figure 8 shows the standard pathway for intentional exercise with additional recommendations for accelerated and extended pathways.

Table 5 shows the potential demands of various activities and sports. The more demanding the activity, the longer and more extensive the rehabilitation programme needs to be.

Figure 8

Intentional Physical Activity and Exercise



Note. APER = *abdominoperineal resection*. EXPASS best practice recommendations © 2026 by ASCN UK is licensed under CC BY 4.0.

Table 5

General Examples of Intentional Sports and Exercises

General examples of sports and exercises showing increasing challenge specific to core / abdominal wall load, from lowest demand to highest demandt
Walking/hiking, beginner jog/walk (couch to 5 km programme), indoor bike, leisure swimming, and beginner level Pilates/yoga Gentle dance, light resistance exercises (bands, light weights, and bodyweight), and bowls
Resistance training (light weights, high reps [12–15], and machines), walking, football/netball, outdoor cycling, running, and group dance fitness classes such as Zumba Longer duration or competitive running, leisure mountain biking, longer distance road cycling, racquet sports (leisure), golf (9 holes / driving range), and fitness swimming Resistance training (free weights, heavier using machines, and lower reps [8–12]), HIIT exercise classes, energetic dance, ball sports/games, and group exercise classes e.g., bodypump Rowing (machine or outdoors), moderate weight training (compound movements, barbell exercises, squats, and deadlifts), racquet sports (competitive), golf (18 holes), ironman triathlon, mountain ultra running, and competitive swimming
Kayaking, snowboarding/skiing, sprint running (track), advanced mountain biking (involving lifting/carrying a bike), waterskiing, windsurfing, deep sea diving, football, rugby, martial arts (competitive/contact), and competitive rowing Hyrox/Crossfit style fitness competition, competitive power lifting, gymnastics, high board diving, and competitive winter sports (higher level or park or as occupation)

Increasing demand

Note. HIIT = high-intensity interval training. EXPASS best practice recommendations © 2026 by ASCN UK is licensed under CC BY 4.0.

Extended Information for Recommendation 8 Return to Exercise and Sport

How to put this into practice:

- It is generally considered that most activities/sports are possible with a stoma, including highly demanding activities, contact sports and competition. This should be the case for most people; however, some individuals may need to modify the way in which they do an activity/sport. Individuals should use the **Self-Evaluation Assessment Tool** and work with a coach or trainer.
- Most individuals will need to engage in physical rehabilitation and sport-specific training to return to very high-level activities/sports, and it should be emphasised that this can be a lengthy process. In some cases (for those on Extended Pathway), it may take many months (potentially 1–2 years or more) after complex surgery or significant illness to return to a presurgery level. For other individuals, this may not be the case (for those on the Accelerated Pathway), and they will be back much sooner. This will depend on individual and surgical factors as highlighted by the EXPASS matrix.
- Starting a new activity for the first time is different than returning to a familiar activity. However, Table 5 should be considered alongside the matrix, pathways, and individual factors taken into account. It should be emphasised that everyone is different and will need different interventions.
- The greater the demand of the activity, the longer time should be spent building up, preparing with training and rehabilitation, and recognising that core exercises are likely to be needed to participate in highly demanding activities.
- Table 5 shows general increasing demands of various activities/sports, specific to the abdominal wall and the concept of *intra-abdominal pressure*. The accidental exclusion of any activity or sport is unintentional. Individual factors such as technique, fitness, strength, previous experience, and body awareness should be taken into consideration and are more relevant than timeline since surgery. *How* someone does something is the most important consideration.
- There is no one-size-fits all and no set timeline. To identify readiness for participation or progression, individuals should become self-aware and learn how to self-evaluate their own response/tolerance of various activities, as well as working with a coach or trainer. Use the **Self-Evaluation Assessment Tool** to identify any long-term unwanted symptoms or sensations.
- For highly demanding activities/sports, individuals should seek advice and coaching from exercise professionals who can work with these recommendations to support their rehabilitation and return to specific sports.
- Rehabilitation should be focused on *activity/sport-specific* exercises potentially using bands, weights, or body weight and gradually building up. Consider the demands of the activity/sport alongside the individual's factors, needs, and history to design exercise choice and programming.

Specific Considerations for Recommendation 8 Return to Exercise and Sport

Support Wear

Some individuals engaging in highly demanding activities may feel support garments are helpful, especially if they have developed a parastomal hernia. This should be a personal choice. For more information, refer to **Support Wear – EXPASS Position Statement**.

Stoma Protection During Activity/Sport and Daily Life

A stoma is generally extremely resilient to knocks and impact during activities/sports and daily life; however, an individual may wish to wear some sort of commercial or homemade protection if they participate in sports where impact to the stoma may occur. This may increase confidence during the activity/sport and may protect the stoma bag from coming loose. Hard, plastic, dome-shaped protection devices are not recommended, as in the case of a high impact or fall, they may cause damage to the abdominal wall. Flatter shaped protection devices, padding, or foam may be suitable. Individuals should be encouraged to explore homemade or available commercial options.

APER, Pan-Proctocolectomy, Pelvic Floor Reconstruction, or Surgery Involving the Pelvic Floor

Individuals having had rectum removal or surgery to the pelvic floor are recommended to restrict high impact activities (running and jumping) to approximately 3–6 months post surgery. This is to enable full healing of the rectal area and to reduce the risk of perineal hernia, in particular those with healing complications (e.g., wound dehiscence). In addition, individuals in this category may also require modifications for seated exercises or those involving sitting or pressure on the rectal area. Cushions, aids, or devices may help. Most individuals will benefit from specific pelvic floor rehabilitation and working with / referral to a specialist in core and pelvic floor rehabilitation–Pilates instructor or pelvic health physiotherapist. For more information, refer to **Appendix 4 Assessment Tools** for the Pelvic Floor Distress Inventory Questionnaire - Short Form 20 to highlight symptoms and pelvic floor dysfunction.[6]

Swimming

All wounds should be fully healed before returning to swimming, due to infection risk. Otherwise, there is no restriction on returning to swimming.

Pilates and Yoga

Pilates and yoga are often recommended as ideal exercise for individuals with a stoma and as postoperative

rehabilitation. However, in reality Pilates is quite different to yoga, and there are many different forms of both and varying levels from beginner to advanced. It is recommended that

Pilates is an excellent choice for anyone with a stoma, but there are varying teaching styles and levels. Initially, choose a class or teacher that is described as clinical or physiotherapy led and look for a beginner-level class. Pilates focuses more on the core, abdominals, and pelvic floor and is quite specific. Yoga tends to be more holistic and focuses on the whole body. Both have their place, but in the postoperative individual after stoma surgery, we would recommend either Pilates or yoga initially. In time, progression can be made to advanced-level classes. Individuals can modify any exercise and work with their instructor to make necessary adjustments. Use the **Self-Evaluation Assessment Tool**.

Getting on and off the Floor

The ability to get on and off the floor easily should be assessed for individuals engaging in floor-based exercises, including Pilates and core exercises. Correct technique should be taught or reinforced so individuals can transfer to the floor and back up again easily. If significant struggle and strain is evident, due to lack of mobility, body weight, or strength, alternative activities in standing or seated positions should be considered. Significant strain and struggle may cause an unwanted increase in intra-abdominal pressure and increase hernia risk. For more guidance, refer to **Appendix 6 Safe Moving and Lifting Techniques.**

Resistance/Strength Training

Resistance or strength training is a form of exercise where the muscles work against resistance in some way, which has the result of maintaining or increasing muscle strength. This can include body weight, resistance machines, bands, barbells, dumbbells, weighted vests, bags, and medicine balls. Terms used interchangeably are any variation of the following: strength training, weightlifting, resistance exercises, and strength and conditioning. A form of resistance exercise (two sessions per week) is a WHO recommendation. Those who have had stoma surgery and also those who have parastomal hernia **should be encouraged to meet this recommendation for their health and maintenance of muscle strength**.[5] It is important not to discourage people from strength training or lifting weights, as this can create fear avoidance and negatively impact their health. However, it is important that individuals understand the importance of core strength needed; correct technique; progressive build up; and appropriate choice of exercise, repetitions, sets, and weight.

Specific Core Exercises or Pilates Training Should Supersede or Run Alongside Returning to Resistance Training, Which Will Help Individuals Manage Intra-Abdominal Pressure

Most individuals will benefit from working with a trainer or coach, but should also use the **Self-Evaluation Assessment Tool** to identify any unwanted symptoms or sensations. For more guidance, refer to **Appendix 6 Safe Moving and Lifting Techniques.**

Resistance Training

Tips for training with weights:

- To begin, choose lighter weights and higher repetitions. Choose a weight that enables 12–15 repetitions, and aim for 2–5 sets without straining.
- Resistance exercises can easily be done in the home using household items (e.g., bottles, cans, TheraBands, or other handheld weights) or with body weight (e.g., squats and calf raises).
- If an experienced individual is returning to resistance training after surgery, a safe reference point can be to start with a maximum of 50% of the weight, repetitions, and sets that they did before, and build up from there.
- Choose exercises that keep weights close to the centre of body. Start with shorter lever exercises and more isolated movements that can be controlled (e.g., bicep curls, shoulder presses, dumbbell lateral raises, and leg extensions) rather than compound movements (e.g., squats, lateral pull downs, and leg presses) that require more core stability and increase intra-abdominal pressure.
- If desired, over time increase weight and reduce repetitions. Choose a weight that enables 6–8 repetitions (2–5 sets) without straining.
- Good technique is essential. Work with a trainer or coach. Avoid straining. Engage core muscles when lifting, pushing, or pulling.
- Avoid Valsalva manoeuvre or any breath holding / bracing. Exhale on the effort or exertion of the exercise to help regulate intra-abdominal pressure and to engage abdominals correctly.
- Start with dumbbells, bands or resistance machines and progress to more advanced training involving barbells and other more advanced equipment as strength develops.
- Gradually build up to heavy compound movements (e.g., back squats and deadlifts) over time. Some modifications may be preferred using machines or lighter weights. Use the **Self-Evaluation Assessment Tool** to identify unwanted sensations around the abdomen, stoma, and pelvic floor.
- There is very little research on this topic, yet there are many examples of individuals with stomas in the real world successfully and safely participating in a range of resistance exercise activities, including body building, power lifting, and competitive fitness racing. Individuals should be encouraged to work with their own body, to understand the implications of their personal surgical history, and to find a way to exercise that feels right to them. There is no *right or wrong*. It is likely it will be different for everyone.

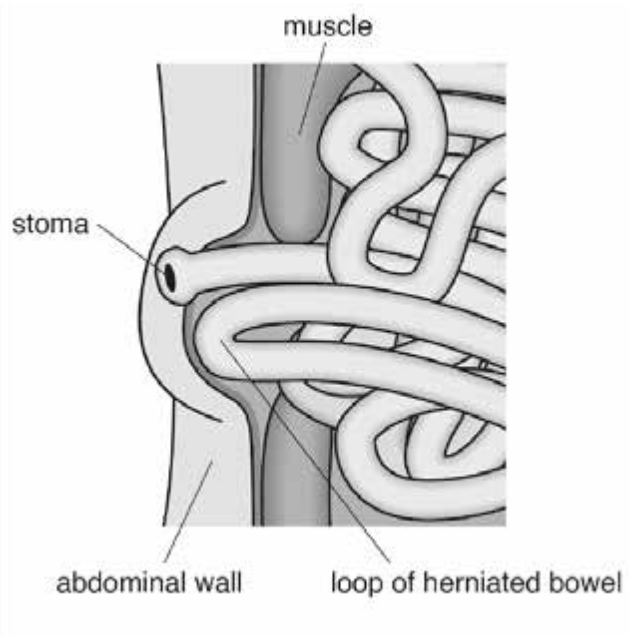
EXERCISING WITH A PARASTOMAL HERNIA

It is widely accepted that around 58% of individuals will develop some degree of herniation or bulge around their stoma and/or will have a medically diagnosed parastomal hernia, in clinical day to day practice it is considered that the incidence is much higher.[13] Therefore, recommendations about exercising when someone has developed a parastomal hernia are also a pertinent consideration.

Figure 9 shows a stoma with additional bowel protruding through the adjacent abdominal wall as a parastomal hernia.

Figure 9

Parastomal Hernia



Note. Russell[12] reproduced with permission of Hammersmith Health Books.

It is known from the literature,[12] that individuals with a medically diagnosed hernia become less active than those with just a stoma. There is much fear surrounding parastomal hernia and exercise. The information available on exercising with an existing parastomal hernia is confusing and contradictory, and there is little to no research or evidence.

It is, however, important to focus on the wider health and well-being of the individual. **It is vital that individuals with a parastomal hernia do not become less active as a result of a suspicion or diagnosis of a parastomal hernia.**

The benefits of exercise and physical activity are likely to outweigh any risk of complications with the hernia or the possibility of making it worse. It is our recommendation that individuals should continue to be active and engage in appropriate core exercises even when they have a suspected or medically diagnosed parastomal hernia. It is likely that appropriate core exercises and better general fitness may prevent worsening of a parastomal hernia and/or prolapse. While there is very little literature specifically about exercising with a parastomal hernia, the Hernia Active Living Trial (HALT) showed that Pilates-style core abdominal exercises were safe and appropriate for individuals with an existing hernia, even for those with large, uncomfortable, or symptomatic hernias.[14] This study showed no adverse events and that core abdominal exercises were appropriate and acceptable to individuals with hernias. Refer to levels 1–3 in Table 3.

Hernias vary significantly between individuals in terms of the exact type, size, and symptoms. Furthermore, everyone is different, so an individualised approach must be taken, in the same way as it is for someone having an initial stoma formation. Overall, however, as a professional supporting an individual with a stoma and/or hernia, it is vital to maintain a positive encouraging approach to physical activity. Avoid discouraging or limiting exercise or physical activity and aim to encourage an individual with a hernia to meet WHO recommendations for physical activity and to engage in core exercises in the same way as any other individual with a stoma.

It is, therefore, our recommendation that the same EXPASS recommendations are followed using the EXPASS matrix and other tools to identify any specific issues (for example with the pelvic floor) for someone at the time a hernia is suspected or diagnosed. In fact, those with a hernia may need even more support and encouragement.

Specific additional suggestions for someone with a suspected or diagnosed parastomal hernia:

Individuals should actively engage with specific core exercises following the same progressions and levels highlighted in Table 3 and the same recommendations for those having initial stoma formation. It is likely a requirement that specific core exercises should be continued for life, likely 2–3 sessions per week of 20–30 min. More challenging core exercises (levels 4–5) should not be avoided if the individual can execute them well and not observe additional doming or bulging on exertion. It is likely that regular core exercises may prevent worsening of the hernia and, thus, should be prioritised.

To focus and prioritise learning/mastering correct breathing mechanics, ensuring ability to regulate intra-abdominal pressure, and engaging core muscles correctly, refer to the ASCN UK YouTube Channel EXPASS. The ability to exhale and contract the core muscles on any effort, exertion, or pushing pulling movement is essential. Refer to **Appendix 5. Recommendations For Materials, Resources, And Referrals** for professionals to use with individuals.

An individual may feel they wish to wear some sort of supportive clothing or a more specific stoma or hernia

support garment, but this is down to personal choice and comfort of the individual as well as the size and symptoms of the hernia.

Individuals can engage in weight training and more extreme exercise as illustrated in Table 5, but this needs to be alongside correct core training, breathing mechanics, and pressure management.

Focus on the exercise benefits; the wider health, physical, and mental well-being of the individual; and the role of exercise in disease prevention, especially for those who have had a CRC diagnosis.

Highlight, where appropriate, the interplay of exercise, diet, and weight management and the importance of reducing pressure on the abdomen through weight loss.

Preparation for hernia repair surgery can involve the same prehabilitation principles as highlighted in Recommendation 3 with specific focus on breathing mechanics, pressure management, weight loss, and general improvements in fitness.

"Fitness is a big part of helping a good outcome – but mindset is equally as important."

SUPPORT WEAR – EXPASS POSITION STATEMENT

EXPASS Position Statement on support wear for individuals with a stoma – as agreed by the Expert Panel and literature.[15-17]

1. **Postsurgery**
   There is no current strong evidence to recommend prophylactic support wear as a measure to prevent parastomal hernia in people with newly formed stomas. Without such evidence, rationale to recommend prescribing support wear should, therefore, not be standard practice, as the justification of increased cost to the NHS, potential unintended harm, and unnecessary medicalisation cannot be justified in view of the paucity of evidence.

2. **When undertaking exercise**
   It is not necessary to recommend all individuals wear support wear when exercising. Currently there is no evidence to support this, and in some cases, restrictive tight clothing/belts may negatively affect movement and breathing. However, many individuals feel that wearing supportive clothing to provide comfort and confidence during exercise is beneficial and is entirely appropriate as a personal choice, but it should not be a mandatory or outright recommendation.[15]

3. **In presence of parastomal hernia**
   For individuals with a large or uncomfortable parastomal hernia, it is likely that some sort of support wear or garment will provide comfort and support, especially when exercising. Support garment measuring/fitting and recommendations/ prescribing should be provided as appropriate by an experienced and competent specialist (which in some areas may be a referral to a reputable company).

4. **Undertaking other forms of physical activity**
   Many individuals with stomas find some sort of supportive clothing or support wear to be helpful, providing comfort and support during activity. This may or may not be specific stoma support wear; it could also be normal clothing such as high-waisted leggings, tights, vests, or anything that helps that individual feel comfortable.

5. **General advice–core muscle strength**
   In many cases, improving core muscle strength and core function will help to alleviate feelings of vulnerability and discomfort around the stoma and will enable the individual to be more active. Appropriate core exercises described in Table 3 and illustrated in Appendix 7 Illustrated Core Exercises should be recommended as a priority rather than an over-reliance on prescribing support wear.

6. **Support wear or support garments**
   While outright prescribing is not recommended for everyone, support wear does have a place if used appropriately for certain individuals. The focus should be on providing comfort, security, and aesthetic, bearing in mind there is not strong evidence to prove the prevention of hernia. Individuals should be provided with information and education to this point.

7. There is a wide selection of support underwear available from high street stores, as well as from specialist companies where products are available for prescription or purchase. This prescription of such items is dependent on local formularies and policy. In view of the large selection of products—the best choice of support wear should be related to whichever the individual finds most comfortable. It should be well fitting, provide firm but comfortable support, but not be restrictive or overly tight. It should not restrict or affect stoma output. Current anecdotal evidence highlights a hole around the stoma reduces the support the product is being provided for and, therefore, these garments are not recommended. Gentle pressure evenly distributed across the abdomen can be achieved by supportive everyday clothing. It may or may not be specific stoma wear.

SELF-EVALUATION ASSESSMENT TOOL

Modifications

What is meant by modification and how to put it into practice. In this context, a modification is a way to make an exercise easier, safer, or more appropriate for an individual at a given time. For an individual with a stoma, appropriate modifications are most likely to involve ways to regulate/control intra-abdominal pressure and manage loading on the abdominal wall and pelvic floor.

Ways to modify an exercise could involve:

- changing the position of the individual or the range/angle of a joint or part of the body to make it easier;
- using some sort of support or assistance (e.g., a chair when doing a single leg balance) or using other ways to provide support (e.g., a spotter for weights or using machines instead of free weights);
- reducing the number of repetitions of a particular exercise;
- reducing the number of sets of a particular exercise;
- reducing the *intensity* of a particular exercise—the effort you're putting in, heartrate, or level of effort;
- reducing the load or weight involved in an exercise;
- increasing the rest periods between reps, sets or exercise sessions—taking longer rest breaks or more days off; and
- doing an exercise in a less challenging way or reducing the level of a core exercise (e.g., returning to a level 2 exercise if a level 3 exercise felt too difficult).

Table 6 shows a self-evaluation checklist to help individuals monitor load, progression, and suitability of an exercise, movement or activity. Refer to the ASCN UK YouTube Channel EXPASS for instruction on doming and self-evaluation.

Table 6

Self-Evaluation Checklist: Sensations and Symptoms

DO NOT WANT	DO WANT
✗ Significant doming or bulging around stoma or generally on the abdomen on exertion	✓ Ability to exhale and engage abdominals and pelvic floor with coordination
✗ Pressure around stoma, pelvic floor, or rectum on exertion	✓ Ability to inhale and relax abdominals and pelvic floor with coordination
✗ Excessive or unusual pulling/tugging around stoma area	✓ Feeling of coordination and control of abdominals and pelvic floor
✗ Prolapse of stoma during or after exertion	✓ Ability to recover from activity within 24 hr without extreme soreness or fatigue
✗ Excessive fatigue/soreness around stoma area or abdominals	✓ No prolonged pain or muscle soreness postexercise
✗ Breath holding or bearing down during exercise	✓ Ability to exhale on exertion/effort during an exercise or activity
✗ Delayed/prolonged recovery postexercise > 24 hr	✓ Some light muscle soreness in the 12–24 hr postexercise can be an indication of appropriate exercise and load
✗ Unexpected change in stoma shape with swelling postexercise	

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Postsurgery Phase: Pain and Progressions

It is normal to experience some sensations of discomfort, tightness, pulling, and pain around the stoma or abdominal wounds in the postsurgery phase when engaging in movement and specific rehabilitation exercises.

While this does not mean it is necessary to stop an exercise, aim to gently work through it or modify it if necessary. Maintain a good pain management strategy with medication and engage in the exercises when the pain is managed well.

Everyone will experience pain/discomfort differently, and pain is relative and individual. It is important to learn to self-monitor using Table 6. For core exercises, in particular, be self-guided and work steadily through progressions as appropriate for each individual.

Monitoring During and After Sport/Exercise

During a specific sport/exercise, monitor for sensations of pulling, doming, bulging, pressure, or heaviness around the stoma or pelvic floor area. Remember that some pain or feeling of discomfort in the postsurgery phase is normal and that this does not always mean that a sport/exercise should be stopped. Instead, try doing 3–4 repetitions of an exercise and then reassess, monitoring any change in the initial symptoms. If symptoms are experienced, then modifications to that particular sport/exercise may be necessary (e.g., change the activity/exercise at that time; check and adjust form and technique; reduce intensity, repetitions, or sets; or add more rest). Seek guidance from an exercise professional or physiotherapist if necessary.

After 24 hr postexercise monitor for:

- Symptoms such as stoma blockage, changes in stoma output (more watery, intermittent, nausea/vomiting, or absent output), stoma swelling or change of colour (pale), prolapsed stoma, and an increase in bulge after the activity/exercise.
- Unexpected pain/discomfort lasting 24 hr after the sport/exercise around the stoma or any incision sites.

If unwanted sensations or symptoms occur, monitor ongoing symptoms closely and seek medical advice if they do not resolve.

Unwanted symptoms or sensations may indicate that the challenge of the sport/exercise at that time is too high. It may be appropriate to modify the sport/exercise in some way rather than avoid it altogether. Try again with modifications and analyse cause and effect.

Over time, things may evolve as the individual either gets fitter or deteriorates. It is important to keep monitoring and adapting throughout life with a stoma.

Everyone will have different needs. Some individuals may need numerous modifications and others will have none. There is no one-size-fits-all.

It is important to be aware of sensations of tightness, light pulling, and occasional sharp pains around the stoma can be normal initially as muscles regain function. If this continues or is distressing, seek advice from a physiotherapist or exercise specialist. *Note.* If there is severe or prolonged pain around stoma or a severe change in stoma output, seek immediate medical advice, as this could indicate a medical emergency.

COMMON FAQS FROM INDIVIDUALS WITH STOMAS

These narratives may be helpful for health care and medical professionals in discussing a stoma with individuals.

What can I do?

Ultimately most sports, activities, and physical occupations, including extreme and highly demanding sports, should eventually be possible for someone living with a stoma, if the individual chooses to undertake. Everyone is different due to individual and surgical factors, and it is important that we consider the *whole person* (the mental well-being, socioeconomic factors, and overall health) and the activities that they enjoy and that are important to them.

Physical activity is essential for good health, and it is important that this is emphasised as someone goes through the stoma surgery journey. No one should come away from surgery feeling that they have a disability or are being told they can not do a certain activity or occupation.

To participate or engage in physically demanding activities and occupations, it is generally considered that people need to rehabilitate after surgery. This is likely to involve some intentional activity, core exercises, and activity/occupation-specific rehabilitation exercise to strengthen the body and to prepare for the demands of the activity/occupation. The more demanding the activity or occupation, the more rehabilitation an individual will need to do. It is important that people realise they cannot just *go back to normal* after a number of weeks. Appropriate intentional rehabilitation-based exercise should be an important part of recovery.

The risk of parastomal or perineal hernia should be respected, but it is not a reason to fear exercise. It is likely that those who are stronger, have good core function and strength, and are more physically active are less likely to develop parastomal hernias and are more likely to manage a hernia without surgery. Some individuals may need to take an extended recovery period and have a very gradual return to the activity/occupation, and some may need to modify certain aspects of an activity/occupation, perhaps in relation to position, duration, or intensity. This should be supported by working with a coach or trainer. However, what is more important is the *whole person* and being able to enjoy life, engage in cherished activities/occupation, and live without fear of movement.

When can I do it?

The timeline and requirements for returning to sport/exercise will be different for each individual, depending on their needs, goals, and history. Using the EXPASS matrix will help give each individual a starting point, framework, and potential timeline for recovery and progression.

Some individuals are able to start to be more active much sooner than others, and that is simply a personal difference depending on a huge range of factors. There is no measure or way to test and decide if someone is strong enough or ready to progress or return to a sport or activity. Instead, we recommend using the **Self-Evaluation Assessment Tool** and becoming more confident with their own body to know what feels right and when, rather than following a specific timeline.

How can I best prepare for surgery?

The concept of preparing for surgery is known as prehabilitation. In addition to the risks of surgery itself, the process of major surgery will inevitably create muscle loss, weight loss, and physical deconditioning. Anything that an individual can do to improve their physical status leading up to surgery will be beneficial, will reduce mortality, and will improve outcomes. The fitter the person going into surgery, the better. Refer individuals to a prehabilitation service or programme that may be available through the NHS, in the community, or in the private sector. There are a number of things that people can do depending on how much time they have and how well they are before their operation. Around 60% of stoma surgeries are planned; therefore, the majority of people will have the opportunity to do something. Focus on increasing muscle strength through training, improving cardiovascular fitness, optimal nutritional status, specific core strength, and also learning the techniques for the exercises that should be implemented immediately postoperatively.

How can I best recover?

There is no need to wait for *6 weeks* to return to exercise or work if someone is recovering well and is doing the correct core rehabilitation. Appropriate movement and activity is an important *part* of recovery, not to be left until someone has *recovered*. Other people, depending on their surgery and health, may need more time and will need a more protracted recovery period with more modification.

Everyone should be encouraged to do some form of core exercises as soon as possible/able postsurgery. This could be within 24 hr (or as soon as possible) after surgery and would be exercises in level 1 of the core exercises (see Table 3), including breathing mechanics, knee rolls, and pelvic twists.[10,11] Exercises can be done in bed, on the floor, or in a chair and can be started in hospital or when home after discharge. Use the EXPASS matrix to help develop a framework and pathway for core rehabilitation and a potential timeline and programme. Refer to a professional with knowledge of pelvic health and core rehabilitation after surgery.

Is there anything I need to avoid?

Everyone is different and some individuals will need to put some modifications in place for specific exercises or movements, but the majority of individuals will not need to avoid anything in the long term.

Initially, some care with awkward and heavy lifting is probably sensible for a few weeks. However, avoiding lifting (things like a kettle or pots and pans) altogether is not recommended, as this creates fear, avoidance, and a barrier to recovery. It is especially important not to restrict lifting of children, as this can create other issues with bonding and development. However, lifting with caution in the first instance is important. Encourage a mobile child to assist by climbing onto a chair or in and out of car. The word *heavy* is relative to the individual, their fitness, and their ability, so *heavy* should be clearly defined and specific examples should be given. People should be taught and shown how to lift safely and how to engage with abdominal muscles to manage intra-abdominal pressure.

Long term, some modifications may be needed if the individual wishes to engage in extreme activities, very heavy lifting, or very repetitive or explosive activities referring to movements that combine speed, power, and strength to generate force rapidly, e.g., a box jump. For some individuals having very complex surgery (pelvic floor reconstruction or total pelvic exenteration [TPE), it is recommended to restrict certain activities such as high impact running and jumping for longer than others (having less complex surgery) to manage the risk of perineal hernia.

How can I reduce my risk of hernia?

The risk of parastomal, incisional, and perineal hernia should be respected but not feared. Parastomal hernia is very common with many factors influencing the development, and it is not known if prevention is entirely possible. No one should live with the fear of a hernia impacting their life and choice of activities. While there is minimal research, clinical practice suggests that exercises to improve core function and strength are important and may reduce the chances of developing a hernia or one becoming worse.

Individuals should be shown how to practice correct breathing techniques and should learn how to engage correctly with their deep abdominal muscles and pelvic floor. Maintaining a healthy weight with a body mass index in the normal range, not smoking, doing appropriate core exercises, and staying active are considered the factors in hernia reduction.

> At seven weeks after my TPE surgery, I tried a 5k run and have been running ever since. At a clinic, I told the surgeon that I was running, and he told me it was a good thing and that I had 'no restriction.' However, it was my own decision that I was ready to start running. It turns out that I'm now running faster and further than presurgery. I would never have dreamed that this would be possible."

APPENDIX 1. EXPASS RECOMMENDATIONS, REFERENCES, AND LEVEL OF EVIDENCE

The table shows the references from the literature review supporting the specific recommendations along with the level of evidence, based on the Registered Nurses' Association of Ontario Interpretation of Evidence shown afterwards.[18]

#	Recommendation	References
1 Exercise and Activity for All	Actively promote the health benefits of exercise and physical activity for each individual preparing for and recovering from stoma surgery and for those living with a stoma.	ASCN UK[19] (V) Beeken et al.[19] (IV) Bull et al.[20] (V) Burke et al.[21] (III) Campbell et al.[22] (V) Dabirian et al.[23] (IV) Dempsey et al.[24] (V) Fingren et al.[25] (IV) Fisher et al.[26] (IV) Hubbard et al.,[27] (IIb) Krouse et al.[28] (IV) Lowe et al.[29] (IV) Lynch and Leitzmann[30] (Ia) Maculotti et al.[31] (IV) Martins et al.[32] (IV) Nakagawa et al.[33] (IV) Park et al.[34] (IIb) Petersén and Carlsson[35] (IV) Romero-Elias et al.[36] (V) Russell[37] (IV) Saunders and Brunet[38] (IV) WHO[5] (V)
2 Individualised Pathway	Develop, in partnership with the individual, a personalised recovery and exercise pathway for each person.	Loor et al.[39] (IV) Loor et al.[40] (Ia) Maculotti et al.[31] (IV) Mena-Jiménez et al.[41] (V) North[42] (IIb) Park et al.[34] (IIb) Pommergaard et al.[43] (IIb) Quigley[44] (IV) Russell[4] (V) Taylor et al.[14] (IV) Thompson and Trainor[45] (IIa) Thompson and Trainor[46] (IIa)
3 Prehabilitation for All	Promote, when possible, appropriate physical prehabilitation to prepare each individual for stoma surgery.	Asnong et al.[2] (IIa) Bausys et al.[47] (IV) Gillis et al.[48] (Ib) Jensen et al.[49] (V) Russell[4] (V) Taylor et al.[14] (IV) van Zutphen et al.[50] (IV)
4 Early Mobilisation	Encourage and support timely postoperative mobilisation and movement appropriate for each individual.	Andersen et al.[51] (IV) ASCN UK[9] (V) Fazzini et al.[52] (Ia) Loor et al.[39] (IV) Loor et al.[40] (Ia) Madan et al.[53] (Ib) Thompson and Trainor[45] (IIa) Thompson and Trainor[46] (IIa)

#	Recommendation	References
5 Core Exercises	Recommend suitable abdominal and pelvic floor exercises for all individuals having stoma surgery and living with a stoma.	ASCN UK[9] (V) Bø et al.[54] (Ib) Chang et al.[55] (Ia) Dumoulin et al.[56] (1a) Kannan et al.[57] (Ib) Liete et al.[58] (Ia) Lin et al.[59] (Ib) Munro et al.[60] (IIa) North[42] (IIb) Russell[37] (IV) Taylor et al.[14] (IV) Thompson[61] (V) Zhou et al.[62] (III)
6 Multidisciplinary Team Approach	Involve and educate, where appropriate, relevant professionals to support each individual, specifically with exercise and rehabilitation.	ASCN UK[9] (V) Loor et al.[40] (Ia) Pommergaard et al.[43] (IIb) Quigley[44] (IV) Russell[37] (IV) Russell[4] (V)
7 Return to Daily Activities	Encourage and support each individual, after appropriate physical rehabilitation, to return to or commence their chosen daily activities, lifestyle, and occupation.	ASCN UK[9] (V) Asnong et al.[2] (IIa) Burke et al.[21] (III) Campbell et al.[22] (V) Dempsey et al.[24] (V) Krouse et al.[28] (IV) Loor et al.[40] (Ia) Lowe et al.[29] (IV) Maculotti et al.[31] (IV) North[42] (IIb) Park et al.[34] (IIb) Quigley[44] (IV) Saunders and Brunet[38] (IV) Thompson and Trainor[45] (IIa) Thompson and Trainor[46] (IIa) van Zutphen et al.[50] (IV) WHO[5] (V)
8 Return to Exercise and Sport	Encourage and support active (including athletes) individuals, after specific physical rehabilitation, to return to or commence their chosen sports, fitness activities, competition, and physical occupations.	Campbell et al.[22] (V) Maculotti et al.[31] (IV) Park et al.[34] (IIb) Wright[63] (V)

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Interpretation of Evidence of Recommendations

Level	Source of Evidence
Ia	Evidence obtained from meta-analysis or systematic review of RCT and/or synthesis of multiple studies primarily of *quantitative* research.
Ib	Evidence obtained from at least one RCT.
IIa	Evidence obtained from at least one well-designed controlled study without randomisation.
IIb	Evidence obtained from at least one other type of well-designed quasi-experimental study without randomisation.
III	Synthesis of multiple studies primarily by *qualitative* research.
IV	Evidence obtained from well-designed non-experimental observational studies, such as analytical studies, or descriptive studies and/or qualitative studies.
V	Evidence obtained from expert opinion or committee reports, and/or clinical experiences of respected authorities.

Note. RCT = randomised controlled trial. Reproduced with permission from Registered Nurses' Association of Ontario. Revised 2017. RNAO.[18]

APPENDIX 2. METHODOLOGY

A review of the literature methodology was chosen as described by Munn et al.[64] which allowed a broader spectrum of evidence, including grey literature, nonindexed papers and reports. A populated checklist was uploaded to the Open Science Framework https://osf.io/ybmhj/ and noted in the article in the *British Journal of Nursing*.[65]

The Expert Panel collaborated in a shared and secure Google sheet to define the keywords for the search strategy. Keyword combinations included *physical activity*, *exercise*, *stoma*, *stoma surgery*, *prehabilitation*, *urostomy*, *ileostomy*, *colostomy*, and *ostomy*. The literature search was conducted by a professor of nursing, two graduate students, and a senior librarian at Queen's University in Ontario, Canada. All researchers had training in JBI methodology. The databases searched encompassed organisation websites and libraries. All papers in English were considered, not limited by year of publication, to ensure relevant works were included. Studies or consensus documents in individuals over the age of 16 were considered. Theses, abstracts, and white papers were included, while company-produced documents were excluded.

Search results were provided to the Expert Panel members so they could screen the title/abstract against defined eligibility criteria. Articles were excluded if they were not related to physical activities or exercise. The project manager ensured Expert Panel members were not assigned to review papers on which they were listed as authors. Pairs of experts reviewed and summarised an average of 10 retrieved documents. Two Expert Panel members reviewed each article independently and recorded relevant data in the data extraction sheet. A data extraction sheet was developed specifically for the project to accommodate the varying levels of experience among members of the Expert Panel. A substantial portion of the evidence considered to be relevant was identified through manual review of the reference lists of papers from the database searches.

The data extraction sheet included the following fields: last name of lead author; year of publication; title; journal; study location; type of paper/study; aim of the article, study, or document; outcomes/conclusions; any recommended tables, figures, appendices, or other references that should be retrieved; key takeaways from this article relevant to this project; observed keywords; what preliminary physical activity recommendations might this article influence; perceived value to the project; and comments. The article authors were not contacted. An Expert Panel subgroup began to organise the evidence around narrative themes. Additional input was invited from other members of the Expert Panel.

The literature analysed was a mixture of qualitative studies, surveys, feasibility studies, case study reports, and some small-scale trials. The literature is generally sparse and of varied quality. It is acknowledged that conducting high-quality randomised controlled trials in this field is incredibly difficult given the number of variables, the difficulty measuring outcomes, and the lack of funding and interest. There is little standardisation of the types and measures of exercise and physical activity across the literature reviewed, and this makes it hard to draw conclusions from multiple studies.

The primary search in November 2023 yielded 30 articles after the removal of duplicates. Through this primary title/abstract screen, 16 papers were retrieved and 14 excluded. The primary search did not include prehabilitation and other surgical specialties, so a secondary search was conducted in January 2024 and identified 88 articles for title/abstract screening. Of those, 10 had already been included in the original title/abstract screen. Of those 10, the Expert Panel rejected five, accepted three again, and deemed two others irrelevant. Of those 88 articles, 57 were rejected, and 29 were considered relevant (three had already been retrieved as part of the first title/abstract screen). As final input to the review, the Expert Panel identified 63 articles by hand searching the references. These included eight articles that underpinned the project scope and outline. The complete list of retrieved articles was divided among the Expert Panel members. The final review included 101 articles, 38 of which were from the title/abstract screen and 63 from hand searching of references. Through the review, 38 articles were eliminated after the full-text review determined that they were not relevant.

The synthesis of the evidence helped inform themes described in the discussion as an interim step in the development of best practice recommendations.

The original plan for developing best practice recommendations was published in the spring of 2024.[65] Preliminary insightswere presented at the World Council of Enterostomal Therapists (WCET) and Association of Stoma Care Nurses UK (ASCN UK) joint congress in Glasgow, October 2024. After completing the review, scoping review results examining postsurgery rehabilitation in individuals with surgical stomas were published in *Sports*[41] The respective search criteria differed from that reported here. Mena-Jiménez and colleagues[41] included articles in Spanish, Portuguese, German, and English and specifically examined the return to physical activity in individuals with surgical stomas. Grey literature sources were excluded. Nevertheless, 9 of their 15 articles were common to both reviews. Our conclusions concur with their findings that the available evidence is limited and heterogeneous and that further research is needed better to understand the role of exercise in individuals with stomas.

Informed by the literature synthesis, the EXPASS Expert Panel then extracted core themes. Best practice recommendations were drafted. After the proposed statements were reviewed, a Delphi methodology was implemented to achieve consensus.[66, 67] The agreement was

set at 80%. The Delphi process consisted of three rounds, with all Expert Panel members voting in each round. The Expert Panel debate results from the first two rounds, then agreed to expand seven recommendations to eight for the final round. The final Delphi round was conducted in January 2025. One hundred percent agreement was reached on all eight of the recommendation statements.

An interprofessional mix of peer reviewers provided input into the best practice recommendations. A total of 18 reviewers provided valuable input into the document. This was solicited during June 2025. Overall, all the reviewers stated that they would recommend these best practice recommendations to colleagues and administrators to support exercise and physical activity before and after stoma formation surgery. Refinements were made to the document, and the overall results and insights were discussed with the Expert Panel. The Expert Panel reviewed multiple drafts of the document. Finally, the completed best practice recommendation document was approved by the ASCN UK committee in September 2025 before publication.

APPENDIX 3. LITERATURE REVIEW SUMMARY

Recommendation 1 – Exercise and Activity for All

A critical finding from the review of literature is that most individuals with stomas are physically inactive and do not meet WHO guidelines for physical activity.[5] This consistent theme in the literature highlights that individuals with stomas are generally sedentary and not meeting recommendations for physical activity.[19,23,26-29,33,37] People with stomas report a reduction in physical activities following their stoma formation.[23,25,37] Specifically, a survey conducted by Russell[37] found that 90% of people living with a stoma are not meeting WHO guidelines for physical activity (150 min per week). This matched findings from Lowe et al.[29] who also found that 84% of individuals with stomas are not meeting WHO recommendations.

In a study by Beeken et al.[19] most participants (56%) reported a decrease in physical activity following stoma formation. This is a worrying trend because of the strong correlation between physical inactivity and poor health outcomes, complications, other health conditions (diabetes, coronary heart disease, osteoporosis, and other cancers), and comorbidities.[20]

The review of literature also highlighted that people with a diagnosis of CRC become significantly less active more so than those who have a stoma for other conditions.[22,37] Consequently, for people who have stoma surgery for a diagnosis of CRC, they are likely to be even more negatively impacted, and the need for more support is greater. Given the importance of exercise and physical activity in relation to cancer prevention and recurrence and in managing side effects and symptoms,[21,22,30] and also in preventing other noncommunicable diseases (including diabetes, cardiovascular disease, and osteoporosis) this is a concerning trend.[24] A study by Nakagawa et al.[33] measured the physical function of people with CRC and stomas (using a range of standardised tests). It showed they have lower fitness levels with apparent deficits in lower limb flexibility, muscle strength and endurance compared to healthy populations. Romero-Elias et al.[36] looked at barriers to physical activity in CRC individuals while undergoing chemotherapy. Individuals, relatives, and health care professionals interviewed all considered that having an ostomy was a potent barrier to physical activity, especially at the beginning of the treatment. Individuals were not encouraged to participate in physical activity, and they did not prioritise exercise as part of their treatment. The authors make excellent recommendations on how many of the barriers to physical activity can be reduced in this individual group. All stoma care nurses and health care professionals involved with individuals with a stoma need to incorporate the recommendation and facilitation of exercise and physical activity in all individuals, and particularly those with CRC. A highly relevant paper by Saunders and Brunet[38] interviewed individuals with rectal cancer and stomas. Most individuals felt they could never return to physical activity levels that they had presurgery and expressed concerns with their stoma led them to avoid physical activity. People felt that their stoma limited their physical activity and that there were many barriers.

The association between lower physical activity levels and the presence of a hernia was explored by Park et al.[34] who showed a lower rate of parastomal hernia among individuals who exercise more. The theory presented is that more active people have better muscle tone and strength, especially around the abdomen. ASCN UK clinical guidelines[9] noted risk factors suggest that abdominal muscle atrophy/ weakness is a key factor in parastomal hernia development. It is, therefore, surmised that strengthening the body in general (through appropriate exercise) and specifically the anterior abdominal wall musculature may be a factor in reducing parastomal hernia risk.

There are multiple and complex barriers to exercise for individuals with a stoma. That makes individuals fearful of exercise and physical activity. There are several perceived and real barriers to being physically active for people with stomas, highlighted by the research. Lowe et al.[29] showed that pain when exercising as well as feelings of depression and tiredness were associated with lower levels of self-efficacy for exercise. Building confidence in people with a stoma to engage in more physical activity may help to alleviate low mood and reduce tiredness because active lifestyles can generate greater energy levels. To build self-efficacy for exercise, it may be necessary to help people with a stoma manage pain expectations around physical activity and set achievable physical activity goals.

The evidence examined through this review describes individuals' fear of developing a parastomal hernia or problems with a hernia (pain, embarrassment, and making it worse), which is the critical driver of inactivity in general. Other factors mentioned in the literature include lack of time, fatigue, ongoing treatment (chemotherapy), fear of causing damage, and cautious medical advice (being told not to exercise), which is interpreted fearfully and negatively.[37]

Martins and colleagues[32] conducted the Ostomy Life Study and found that 62% of people avoid exercise because of their stoma. Seventy-five percent of respondents reported leakage from their stoma bag as their reason for exercise avoidance.[32] A study on quality of life in Sweden by Petersén and Carlsson[35] showed that people *do not trust their bodies* and are fearful of movement. In addition, people with a temporary stoma often put their lives on hold and avoid engaging in their everyday activities.

For health care professionals in stoma care, it is essential to consider how best to encourage patients to engage in physical activity and how best to educate them to take

part safely and with confidence that their stoma will not cause problems. After stoma-forming surgery, people with a stoma should be encouraged to engage in physical activity. This helps promote blood circulation, maintain good joint function, and, crucially, strengthen the muscles.[31]

Recommendation 2 – Individualised Pathway

Advice regarding exercise following stoma surgery is currently inconsistent (lacking both consensus and evidence-based guidance) and is often overly restrictive. This variability can lead to confusion, inactivity, and reduced quality of life. Maculotti et al.[31] highlight the benefits of physical activity postsurgery, showing that when patients are supported appropriately, particularly by a stoma nurse, they can regain control, manage their stoma more confidently, and enhance their physical and mental well-being. However, 57% of participants in their study reported receiving no relevant exercise information from health care professionals, underscoring the need for improved, individualised guidance.

Although existing literature,[34,42,45,46] supports the role of abdominal exercise in reducing the risk of parastomal hernia, many patients report a lack of clear, actionable instruction. Where structured programmes were provided, studies revealed low compliance—often due to insufficient personalisation or follow-up support. Thompson and Trainor[45,46] confirmed that noncompliance significantly influenced their outcomes, with statistical improvements only evident when compliant patients were analysed separately. Quigley's Stoma Health and Preventive Exercise[44] programme addressed this by introducing tailored, one-to-one, nurse-led teaching from as early as one-week postsurgery. Early results showed a 90% increase in physical activity and a 30% reduction in parastomal hernia incidence, suggesting that individualised support encourages better engagement and outcomes.

There is also a longstanding gap in evidence-based postoperative advice. Loor et al.[39] found that only 24% of surgeons based their guidance on literature, with most relying on personal experience or training, contributing to significant variation in recommendations. Loor et al.[40] further argued that restrictive advice can adversely affect recovery, mental well-being, and socioeconomic participation. Similarly, Pommergaard et al.[43] found no solid evidence for early postoperative restrictions and noted that overly cautious advice can result in noncompliance or unnecessary lifestyle limitations.

From a nursing perspective, Mena-Jiménez et al.[41] emphasise the value of understanding each individual's perceptions and behaviours to provide more practical, emotional, and informational support. This personalised approach helps tailor care to the individual's unique needs, improving engagement. Russell[4] also supports a person-centred model, showing that modifying core exercises to an individual's preferences and lifestyle can promote a quicker return to activity and improve quality of life.

In summary, a one-size-fits-all approach to exercise poststoma surgery is ineffective and potentially harmful. The literature consistently points to the benefits of personalised, collaborative recovery and exercise pathways tailored to each individual's surgical experience, medical history, and personal goals. The HALT study[14] allowed for variation in the number and duration of sessions delivered to participants to accommodate the different need for support from the exercise instructors after it was identified that personalised exercise programmes have been shown to improve postoperative outcomes. Developing these pathways in partnership with the patient is key to improving compliance, reducing complications, and supporting holistic recovery.

Recommendation 3 – Prehabilitation for All

While still an emerging field, prehabilitation is increasingly recognised as an important intervention to improve outcomes for individuals undergoing major abdominal surgery, including those likely to require stoma formation. Evidence from colorectal and urological cancer populations suggests that engaging in prehabilitation can enhance physical fitness, reduce postoperative complications, shorten hospital stays, and support improved recovery and quality of life.[4,47,49]

Prehabilitation generally refers to interventions introduced preoperatively to strengthen an individual's physical, nutritional, psychological, and medical condition with the aim of reducing surgical risk and improving postoperative recovery.[47] Although no studies were found specifically examining prehabilitation in the stoma population, research in related surgical areas (e.g., CRC surgery) is relevant, as many of these patients also undergo stoma formation.

Gillis et al.[48] found that prehabilitation significantly improved postoperative physical performance, as measured by the 6-min walk test. Bausys et al.[47] reported that most prehabilitation programmes in CRC patients showed improvements in physical/nutritional status and quality of life as well as reductions in length of stay and postoperative complications. Jensen et al.[49] further emphasised the benefits of multimodal prehabilitation (including physical training, nutritional support, and psychological care) in major urological oncology surgeries.

Despite the growing evidence base, there is a notable gap in research around the role of abdominal and pelvic floor muscle exercises specifically for individuals undergoing stoma surgery. Clinical experience suggests that such targeted interventions could be beneficial, particularly for preventing complications such as parastomal hernia.[4,14]

The HALT trial,[14] although not strictly preoperative, demonstrated the benefits of a clinical Pilates-based exercise intervention in individuals with parastomal hernias. Participants reported improved core strength, posture, and

confidence, with potential for reducing hernia progression. This suggests a strong rationale for exploring similar interventions in the preoperative setting.

Furthermore, early postoperative reductions in physical activity are common,[2] and poor preoperative physical performance is a known predictor of worse outcomes.[49] Encouraging prehabilitation may help mitigate this decline and improve recovery trajectories. While van Zutphen et al.[50] found that physical activity before surgery did not independently predict recovery, increasing activity postsurgery was positively associated with regaining physical function. This supports a continuum of rehabilitation that begins preoperatively and extends into the postoperative period.

The ASCN UK guidelines[9] also recommend therapeutic exercise as part of perioperative care and highlight the value of tailored interventions that can begin presurgery to improve physical readiness and reduce complications such as parastomal hernia.[4] These can include instructional resources such as booklets, videos, or structured classes, delivered by physiotherapists, stoma care nurses, or specialist exercise instructors. While further research is needed to identify the optimal type and delivery of such programmes in this specific population, existing evidence from colorectal and urological surgery populations, combined with expert clinical opinion, provides a strong foundation for its inclusion as best practice.

Recommendation 4 – Early Mobilisation

ERAS is well established in colorectal surgery and has proven benefits including reduced hospital stay and reduced mortality.[53] Early mobilisation (where possible) as part of this protocol is key in improving independence and reducing muscle wasting. Fazzini et al.[52] did a systematic review and meta-analysis to look at muscle wasting during critical illness, highlighting that patients lose 15% of muscle mass in one week, or 2% per day, when in the ICU. It is, therefore, key to encourage early mobilisation, involvement of the physiotherapy teams, and education of the patient on the benefits of early mobilisation as soon as possible after surgery.

The original work by Thompson and Trainor[45,46] provided the foundation for much of the postoperative rehabilitation that followed in the prevention of parastomal hernia. This early work, while small studies, did show a reduction in parastomal hernia in patients who had been given a combined intervention of core exercises, wearing a support garment, and advice on lifting. Further study is warranted to identify which element of the intervention was most effective, but this is complex and there are many other variables involved. That said, it showed that a nurse-led intervention of some sort may be able to reduce the incidence of parastomal hernia and that the intervention should start as soon as possible postoperatively.

Breathing and gentle exercise can be started within 24 hr (or as soon as possible) after surgery.[10,11] These exercises are physiotherapy/clinical Pilates-led movements and can be done in a hospital bed or at home in the first few days and weeks after surgery. They involve things like knee rolls, pelvic tilts, bridges, etc. This early intervention is likely to improve confidence, to prevent guarding and dysfunctional movement patterns, and to improve healing.

A qualitative survey among 420 surgeons and a systematic review by the team led by Loor examined postoperative work and activity restrictions after abdominal surgery.[39,40] It showed wide variation in the practices and attitudes of surgeons in the US. The recommendations by surgeons differed strongly, and there was no consensus between surgeons on what was the best advice for patients post abdominal surgery. The systematic review examined time to return to work, early return to activities, and possible interventions to improve the recovery period. This review concluded that there was a lack of quality data and a need for better designed studies. However, they noted that overly restrictive advice (such as restriction on the amount of weight lifted or advice not to exercise) in the postoperative period has no evidence and could do more harm than good, reducing patients' physical activity levels and creating fear avoidance behaviours.

Anderson and colleagues studied specific core exercises done by patients after stoma surgery. They used electromyography to measure abdominal muscle activity in 37 patients after stoma surgery and looked at pain, discomfort, and difficulty of each exercise.[51] The exercises suggested are aligned with clinical Pilates practice, gentle core exercises, and physiotherapy rehabilitation. This study provides a model for increasing exercise intensity at three different postoperative stages (0–2 weeks, 2–6 weeks, and 6–12 weeks). They found that most of the exercises were feasible (even in the 0–2 weeks postsurgery group), although some were more effective than others in terms of measured muscle activity. Patients in the 0–2 weeks postoperative group had the lowest levels of muscle activity as measured; but, it is not known how exactly the exercises were taught and what cues were given. They noted limitations in recruiting patients (with a large number declining to participate), in the selection of exercises, and in the period studied. Further work is warranted.

Recommendation 5 – Core Exercises

Specific abdominal exercises appear safe, tolerable, and appropriate for individuals after stoma surgery and for those with a parastomal hernia.[14,51,60] Early work done by Thompson and Trainor[45,46] and then North[42] highlighted the potential benefit of abdominal exercises as part of a parastomal hernia prevention intervention. Although relatively small-scale studies, these have been instrumental in paving the way for much of the work in this area, showing

that a mixed intervention of core exercises, support garments, and advice on lifting reduced the incidence of parastomal hernia.

Andersen and colleagues[51] identified specific effective exercises for the abdominal muscles that could be done at various stages of recovery. The individuals in the study found the exercises suitable and appropriate, but highlighted the importance of careful exercise selection and progression of the exercises based on the individual's recovery. Showing that a step-by-step, carefully structured exercise programme is important.

The HALT study[14,60] showed that clinical Pilates-style exercises were considered feasible and safe in individuals with an existing parastomal hernia. This feasibility study showed improved quality of life; a sense of control over the stoma and hernia; and in some cases, a perception of the hernia being smaller. Although a small feasibility study, this is reassuring to health care professionals and patients alike that appropriate specific core exercises can be done by people with existing hernias.

The ASCN UK clinical guidelines[9] state that individuals should commence abdominal exercises at 3–5 days postoperatively, with the goal to eventually improve abdominal muscle tone and strength. These exercises are demonstrated as gentle movements that can be done in bed, including pelvic tilts, knee rolls, and diaphragmatic breathing. These may typically be considered as physiotherapy or Pilates-led exercises, are gentle, and are considered safe. Some individuals, however, may not be familiar with such exercises and may require instruction and coaching. This can be a limitation in how well an individual engages with this style of rehabilitation. Education of all health care professionals to be able to teach these exercises to patients is needed.

Programmes and videos showing these exercises are available in various formats (online, printed booklets, books, etc.) and individuals can be signposted to them.

Despite these studies and work, core rehabilitation is not yet widespread practice anywhere in the world, despite greater awareness of the importance and training delivered in the UK. Russell[37] found that 87% of individuals did not do any sort of abdominal exercises. While there is no comparison data on this in 2025, it is felt there has been some slight improvement generally with some stoma nurse education, some ostomy bag manufacturers offering specific exercise programmes, and a greater awareness in peer-peer ostomy groups and social media.

It is felt, however, that clinical practice in this area is reasonably well established despite the lack of evidence, with numerous practitioners (such as private or NHS physiotherapists, cancer rehabilitation groups, online private services, clinical exercise specialists, and clinical Pilates teachers) delivering interventions of appropriate, safe and effective abdominal and pelvic floor muscle exercises to individuals having stoma surgery. Collaboration with these practitioners and further research is needed.

We were unable to identify any literature specifically related to pelvic floor dysfunction and individuals living with a stoma. Anecdotally, pelvic floor dysfunction (urinary incontinence and vaginal prolapse in those with a faecal stoma as well as bowel dysfunction and vaginal prolapse in those with a urinary stoma) is noted by clinicians in people who have had stoma surgery (for any reason); this is an area for further study.

Research does exist in the area of stoma reversal, looking at pelvic floor function in individuals after stoma reversal—those with low anterior resection syndrome (LARS) or following CRC surgery.[59] Lin and colleagues[59] demonstrated that pelvic floor muscle training (PFMT) was effective in reducing faecal incontinence in stoma reversal patients, suggesting greater effect if training was implemented within the first 6 months following surgery. It is, therefore, likely that PFMT is helpful in managing symptoms of LARS and/or faecal incontinence in stoma reversal individuals; however, further research is needed to substantiate this. A scoping review by Zhou et al.[62] on pelvic floor rehabilitation in CRC patients found that pelvic floor rehabilitation can generally help bowel symptoms, quality of life, and psychological status after colorectal surgery.

In the nonstoma-specific research that was reviewed, the effectiveness of PFMT was highlighted. In prostate cancer populations, a systematic review and meta-analysis demonstrated that PFMT offers a positive effect on male urinary incontinence, with quicker symptom improvement outcomes than are typically achieved by 6 months of natural recovery.[55] A 2018 Cochrane review[56] supports the benefits of PFMT for improving or curing female urinary incontinence and a systematic review and metanalysis by Liete et al.[58] demonstrated that even interventions consisting of education and instruction about PFMT demonstrated effectiveness. Additionally, Bø et al.[54] reported that PFMT has high-level evidence as a first line treatment for pelvic organ prolapse in the general female population.

Although a small trial, Kannan et al.[57] looked at PFMT, yoga, and Pilates in elderly women with urinary incontinence, comparing the three interventions. They found evidence to support the feasibility and effectiveness of doing both yoga and Pilates, compared to isolated PFMT intervention on symptoms of urinary incontinence. They noted that exercises need to be performed five times per week (30–45 min). This highlights the need for research into 'dose' of exercise prescription for stoma patients, as it is not known what amount of training is optimum.

Despite the high-level evidence supporting PFMT for managing pelvic floor dysfunction in male and female populations, little is known about the role of PFMT in supporting individuals living with a stoma. Anecdotally, it

is common to see individuals living with stomas in clinical practice who also present with pelvic floor symptoms, such as pelvic pain, perineal hernia, and incontinence. While some stoma-related surgeries are more complex than others and may involve the excision of the rectum, gynaecological procedures, pelvic floor reconstruction, or urostomy formation, other approaches will not involve wider pelvic-related structures. Therefore, while it may be obvious that there is a role for PFMT in individuals undergoing complex surgical approaches, the possible role that it offers for all individuals undergoing stoma formation could be overlooked. Research studies investigating pelvic floor dysfunction (e.g., prospective cohort studies) and the role of PFMT (e.g., intervention studies) in individuals with stoma formation are warranted.

Recommendation 6 – Multidisciplinary Team Approach

Pommergaard and colleagues surveyed surgeons on their attitudes and advice about restrictions after abdominal surgery. They concluded a lack of consensus on restrictions on physical activity advice after abdominal surgery.[43] The study showed disagreement on restrictions and widely varying advice. They found no evidence to support specific restrictions and more research was recommended.

Like the qualitative study by Loor et al.[39] both groups noted that little evidence exists to support the restrictions imposed on patients after colorectal surgery and that there is no consensus between surgeons. The level of restrictions varied enormously with generally more restrictions on open surgery than laparoscopic. Lacking evidence, the restrictions may not be necessary and have significant consequences for the individual.[43]

Most significantly, these studies emphasise that surgeons must be part of the multidisciplinary team and part of the dialogue in best practice development and implementation. Education of the individual and among the multidisciplinary team is a foundation to teach appropriate abdominal exercises to retrain abdominal muscle strength.[44]

The stoma nurse specialist has a significant influence on the patient outcomes relating to hernia prevention and management.[4,9] Using the appropriate language and introducing individuals to a therapeutic exercise programme (with a person-centred approach) will build confidence and increase quality of life for each individual.

Russell[37] surveyed 2,631 patients in the UK and found that people had wide-ranging experiences with comments from people including 'I was never given advice about exercise' and 'There is a need for much more support and advice about exercise'. Eighty-two percent of individuals were never given advice about abdominal exercises (despite it being an ASCN UK clinical guideline[9]) and 67% of people reported they were never given advice about general physical activity. This highlights the lack of knowledge about exercise within health care professionals, perhaps the lack of priority due to time constraints, or lack of expertise and thus the ongoing need to provide everyone involved with access to available information.

Recommendation 7 – Return to Daily Activities

Asnong et al.[2] looked at physical activity levels in people with CRC up to 12 months after surgery and/or stoma closure. They found that, at one year postsurgery, total physical activity levels remained lower than preoperatively. This included intentional exercise participation, but more concerningly, levels of activity in their occupations were lower and only 52% of people returned to an active occupation. Their recommendation is that individuals at high risk for decreased physical activity should be identified and supported to increase their activities.

Burke et al.[21] conducted a meta-synthesis of quality of life in cancer survivors, identifying 40 studies that were relevant to review. The aim of the review was to collate existing qualitative research regarding the impact of physical activity on their quality of life. While not all individuals with stomas have cancer, the discussion and themes in this paper are relevant to those with stomas and recommendations can be extrapolated. They concluded that physical activity has a positive impact on various dimensions of quality of life and that the promotion of physical activity is likely to have significant implications.

Global public health guidelines on physical activity and sedentary behaviour for people living with chronic conditions[24] highlighted the need for public health care professionals to promote the WHO[5] guidelines on physical activity. The growing burden of chronic disease is affecting the entire world, contributing to large financial and social burdens through lost productivity and health care costs. Physical inactivity in stoma patients is a key concern, with many people not returning to work or not exercising at a level to prevent other comorbidities. While this paper has no mention of stoma, if individuals living with a stoma have increased risk of other chronic conditions due to their inactivity, then the guidelines within this paper are highly relevant. The paper concludes with a call to action to integrate physical activity into primary care, to bridge gaps, and to create health-enhancing environments. This is highly relevant to individuals with stomas and reinforces the need for structured, tailored advice and interventions to encourage physical activity in what could otherwise be a very sedentary population.

Krouse et al.[28] looked very specifically at physical activity, bowel function, and quality of life among CRC survivors. They found that 60% of people (up to 5 years postdiagnosis) were not sufficiently active (for health). Bowel function (after surgery or stoma formation) has overwhelming implications

for quality of life. Some participants noted certain activities that help with bowel function, including walking, biking, and Pilates. Identifying strategies that will lead to improved patient compliance and benefit are needed. They found that men with stomas face more challenges and are less active compared to women, and this requires more study.

Restrictions on work and activity after abdominal surgery is a systematic review aiming to assess what is known about recovery after abdominal surgery.[40] Due to the risk of incisional hernia (30%), many surgeons impose restrictions on individuals with regard to lifting, sport/exercise, and return to work. Loor et al.[41] conclude that there is no consistency or evidence base for these restrictions and that there is little understanding about recovery from abdominal surgery. The paper identified significant gaps in what is known about what is best for patients as they recover from abdominal surgery. Emphasising patient quality of life should be prioritised and they conclude that in the absence of evidence, restrictions should be given with caution.

Lowe et al.[68] published a research report looking at physical activity levels and barriers to exercise in people living with a stoma. Using a range of validated questionnaires, they investigated physical activity levels, quality of life, self-efficacy for exercise, barriers to exercise, and social physique anxiety. They discovered that 84% of patients failed to achieve recommended physical activity levels, which is consistent with prior research. Self-efficacy was found to be lower in those who were inactive, indicating that those who are least active need the most support and encouragement to engage in exercise. They recommend that health care professionals need to provide more specific guidance around being active with a stoma. Greater efforts need to be made by health care professionals to promote active lifestyles, both initiating and maintaining changes in health behaviour. Building strategies to improve self-efficacy is important for long-term maintenance of exercise behaviour.

A qualitative study by Saunders and Brunet[38] looked at what it takes to be physically active with a stoma after surgery for CRC. They interviewed 15 CRC patients aged between 34 and 80 years, most were men and all had a stoma. The main findings were organised into three themes a) reasons to engage in exercise, b) deterrents to engaging in physical activity, and c) practical implications. Participants indicated many deterrents, including stoma bag leakage, adverse side effects of cancer treatment, and difficulties staying motivated. Not all issues were stoma related, but patients reported a complex and wide-ranging list of limitations. While cancer survivors perceive exercise to be beneficial, there are still many deterrents which make it difficult. Support from health care professionals and finding solutions to the barriers and deterrents are suggested ways to improve this.

Van Zutphen et al.[50] showed how an increase in physical activity after CRC is associated with improved recovery of physical functioning. Participants completed questionnaires to assess their physical functioning and level of physical activity at 6 months postdiagnosis. Not all participants had stomas, but as with other papers, the results can realistically be extrapolated and are relevant. They found that 54% of people had not regained physical function and had not recovered to preoperative baseline by 6 months. People who had increased their physical activity level were much more likely to have recovered. Interestingly, they did not find the level of activity presurgery associated with recovery of physical function. They recommend an increase in moderate to vigorous physical activity after surgery to aid recovery back to baseline of physical function.

Many papers have highlighted the need for a specific physical therapy / exercise programme to be developed to potentially prevent/reduce parastomal hernia.[31,34,42,45,46] While general exercise is important, it is likely that specific rehabilitation for the abdominal wall muscles to help reduce risk of hernia is key and can act as the bridge to enable people to feel more confident in their body.[9] The Stoma Health and Preventive Exercise (SHAPE) initiative in Northern Ireland UK has become an established part of the local recovery pathway for stoma patients.[44] Although a relatively small-scale study, survey results showed a 90% increase in physical activity levels in participants and a 30% reduction in the number of patients reporting a parastomal hernia.

Further consideration is also necessary in how to make health care professionals feel more confident to encourage and support stoma individuals to engage in appropriate exercise. Further research should focus on the barriers to exercise and physical activity in stoma individuals and should explore the reasons in more detail. Physical *inactivity* is likely to do significantly more harm to the health of an individual than appropriate exercise, and all health care professionals should prioritise encouragement and facilitating people with stomas to be active in line with WHO recommendations.[5]

Recommendation 8 – Return to Exercise and Sport

Several authors in the last 10 years have begun to explore intentional exercise and a return to sport/physical activity after stoma surgery.[31,34] Park et al. in the US examined parastomal hernia rates after ostomy surgery among 433 respondents who engaged in intentional vigorous physical activities such as heavy lifting, digging, aerobics, or fast bicycling.[34] An association was identified between physical activity and parastomal hernia, with a higher rate in people who exercised less. This was, perhaps confounded by obesity or the possibility that individuals with parastomal hernia may be limited physically by their hernia. Nevertheless, a strong statistical association was found between less exercise and a higher incidence of parastomal hernia.

Maculotti et al.[31] looked at barriers to sport and exercise in people living in Italy after stoma surgery. They found that 56% of people did engage in some sort of physical activity

(including more extreme activities such as parachuting, gymnastics, and climbing) and that most people did not feel limited by their stoma. However, limitations of the study were the use of a convenience sample and that the survey was self-reported, which offered limited opportunity for probing and deeper questioning. They suggest that most people should still be able to participate in any sport/physical activity they choose, but it is essential for a new patient to have a physical evaluation and discussion with a stoma specialist. With the right approach, stoma care nurses and therapists can help people overcome the worries and challenges around managing a stoma during physical activity. They conclude that the support, approach, and advice from health care professionals is key to enabling patients to engage in their chosen sport/physical activity

Campbell and colleagues conducted an international multidisciplinary roundtable that produced consensus statements on exercise guidelines for cancer survivors.[22] While specific to cancer, many findings are transferrable regardless of reason for stoma. The group followed a robust methodological process reviewing only randomised controlled trials, systematic reviews, or meta-analysis and found strong evidence for the role of exercise before, during, and after cancer treatment (including surgery), aiding physical function, anxiety, depression, fatigue, health-related quality of life, and lymphedema. The overall conclusion is that exercise is generally safe for cancer survivors; although, there is no specific mention of stoma in the paper. The quality and depth of evidence in this field continues to grow, and the benefits of exercise specific to bowel cancer are indisputable. Many individuals having stoma surgery also have cancer, and the general recommendations from this roundtable paper can certainly be extrapolated and are relevant. The roundtable participants emphasised considering referral to a physical therapist or exercise specialist to develop personalised exercise programmes which meet their clients' needs.

In the real world, there are examples of people with stomas engaging in a wide range of activities and extreme sports on social media, in the press, and online in blogs and articles. Individuals participating in ultra distance running, competitive rugby, professional football, powerlifting, bodybuilding, high altitude mountaineering, and long-distance swimming, for example, highlight the possibilities and that life with a stoma should not be limited. Within the literature reviewed, bodybuilder Zoey Wright shared her personal journey with returning to the gym with a stoma.[63] Her story demonstrates how a team with knowledge/understanding can support an individual to return to previous activity, including weightlifting activities. It is also consistent with those with lived experience as members of the EXPASS Expert Panel which included individuals participating in rugby, adventure racing, ultra distance running, cycling, football, and fitness competitions.

APPENDIX 4 ASSESSMENT TOOLS

Validated tools are critical to the appropriate assessment of individuals. Two of these noted in the document are reproduced below for ease of reference.

Pelvic Floor Distress Inventory Questionnaire - Short Form 20

The Clinical Frailty Scale (often referred to as Rockwood Frailty Scale)

The Pelvic Floor Distress Inventory Questionnaire - Short Form 20 (PDFI-20) is a 20-item questionnaire that is the short form of the 46 question Pelvic Floor Distress Inventory. It aims to reflects symptoms experienced over the last 3 months, and is divided into three subscales a) Urinary Distress Inventory 6 (UDI-6), b) Colorectal-Anal Distress Inventory 8 (CRADI-8), and c) Pelvic Organ Prolapse Distress Inventory 6 (POPDI-6). The PDFI-20 can be given in its entirety or as individual scales. Individuals answer yes or no to questionnaire items and then ranks the level of bother of each "yes" item on a Likert scale, where 1 = not at all; 2 = somewhat; 3 = moderately; 4 = quite a bit; and no answers receive a 0.

Scale scores - The mean value of all questions answered is then multiplied by 25 for the actual score (range 0 to 100); andSummary score - Add the scores from the three scales together to obtain the summary score (range 0 to 300). The higher the score, the greater the perceived impact that pelvic floor dysfunction has on a patient's life.

Pelvic Floor Distress Inventory– short form 20

Instructions: Please answer all of the questions in the following survey. These questions will ask you if you have certain bowel, bladder, or pelvic symptoms and, if you do, how much they bother you. Answer these by putting an **X** in the appropriate box or boxes. While answering these questions, please consider your symptoms over the last 3 months.

The PFDI-20 has 20 items and 3 scales. All items use the following format with a response scale from 0 to 4.

Do you ?

No; Yes

If yes, how much does it bother you?

1	2	3	4
Not at all	**Somewhat**	**Moderately**	**Quite a bit**

Scales

Pelvic Organ Prolapse Distress Inventory 6 (POPDI-6):

1. Usually experience pressure in the lower abdomen?
2. Usually experience heaviness or dullness in the pelvic area?
3. Usually have a bulge or something falling out that you can see or feel in your vaginal area?
4. Ever have to push on the vagina or around the rectum to have or complete a bowel movement?
5. Usually experience a feeling of incomplete bladder emptying?
6. Ever have to push up on a bulge in the vaginal area with your fingers to start or complete urination?

Colorectal-Anal Distress Inventory 8 (CRAD-8):

7. Feel you need to strain too hard to have a bowel movement?
8. Feel you have not completely emptied your bowels at the end of a bowel movement?
9. Usually lose stool beyond your control if your stool is well formed?
10. Usually lose stool beyond your control if your stool is loose?
11. Usually lose gas from the rectum beyond your control?
12. Usually have pain when you pass your stool?
13. Experience a strong sense of urgency and have to rush to the bathroom to have a bowel movement?
14. Does part of your bowel ever pass through the rectum and bulge outside during or after a bowel movement?

Urinary Distress Inventory 6 (UDI-6):

15. Usually experience frequent urination?
16. Usually experience urine leakage associated with a feeling of urgency, that is, a strong sensation of needing to go to the bathroom?
17. Usually experience urine leakage related to coughing, sneezing or laughing?
18. Usually experience small amounts of urine leakage (that is, drops)?
19. Usually experience difficulty emptying your bladder?
20. Usually experience *pain* or *discomfort* in the lower abdomen or genital region?

Scale scores: Obtain the mean value of all of the answered items within the corresponding scale (possible value 0 to 4) and then multiply by 25 to obtain the scale score (range 0 to 100). Missing Items are dealt with by using the mean from answered items only.

PDFI–20 Summary Score: Add the scores from the 3 scales together to obtain the summary score (range 0 to 300). Reproduced with permission of Elsevier. Barber et al.[6].

The Clinical Frailty Scale

Item	Description	Details
1	Very fit	Robust, active, energetic, well-motivated, and fit. Commonly exercise regularly
2	Well	Without active disease but less fit than category 1
3	Managing well	Disease symptoms are well-controlled to those in category 4
4	Apparently vulnerable	Although not frankly dependent, commonly complain of being slowed up or have disease symptoms
5	Mildly frail	Limited dependence on others for IADLs
6	Moderately frail	Help is needed with BADLs and IADLs
7	Severely frail	Completely dependent for all BADLs and IADLs
8	Very severely frail	Completely dependent, approaching end of life. Could not recover from even a minor illness
9	Terminally ill	Life expectancy <6 months but not otherwise frail
IADLs = instrumental activities of daily living: banking, transportation, cooking, cleaning, medication management, shopping. BADLs = basic activities of daily living: feeding, bathing, dressing, toileting, ambulation.		

Note. Moorehouse and Rockwood,[7] reproduced with permission from Sage Publications.

APPENDIX 5. RECOMMENDATIONS FOR MATERIALS, RESOURCES, AND REFERRALS

The core rehabilitation programmes that align best with EXPASS recommendations are:

- Clinimed Breathing and Movement - Exercise booklet available free of charge from Clinimed https://www.clinimed.co.uk/resources/breathing-and-movement-for-people-with-a-stoma/
- Fittleworth Simple Steps – Exercise booklet available free of charge from Fittleworth https://www.fittleworth.com/simplesteps/
- me+recovery – Convatec – Exercise programme available free of charge from Convatec. https://www.convatec.com/ostomy-care/living-with-an-ostomy/lifestyle-support/me-recovery-series/

Additional useful resources include:

- Active Ostomates booklet from Colostomy UK;
- The Bowel Cancer Recovery Toolkit – book by EXPASS author Sarah Russell;
- Coloplast Core 4 – Exercise Leaflet from Coloplast Care;
- NHS Squeezy App for pelvic health;
- Other NHS trusts, charities or organisations may also provide leaflets and information for people having abdominal and or stoma surgery which may be appropriate; and
- The Ostomy Studio – online service from EXPASS author Sarah Russell.

Exercise professionals and physiotherapists with training in the following areas may be able to support individuals with a stoma:

- clinical Pilates – APPI or similar approach;
- additional training in pelvic health;
- specialist pelvic health physiotherapists; and
- cancer rehabilitation training – with CanRehab, The Wright Foundation or Pinc and Steel.

Tips on how to do this safely:

- use a chair or stable support if needed;
- take a step-by-step approach, pausing at each stage;
- exhale when sensation of effort is felt, do not hold breath;
- if possible, step into a lunge position, get onto hands and knees first, then turn to side, lowering hips to floor. Lie on side, then roll to back; and
- reverse technique to stand back up.

Refer to the ASCN UK YouTube Channel EXPASS.

APPENDIX 6. SAFE MOVING AND LIFTING TECHNIQUES

Getting on and off the floor

Examples of good technique may include:

- use a chair or stable support if needed;
- take a step-by-step approach, pausing at each stage;
- exhale when sensation of effort is felt—do not hold breath; and
- if possible, step into a lunge position, get onto hands and knees first, then turn to side, lowering hips to floor. Lie on side, then roll to back. Reverse technique to stand back up.

Getting up from a chair

Try to avoid pulling up on an aid or pushing down hard on the arms of the chair where possible. Use the strength of the legs if able. Exhale when standing, avoid breath holding and bearing down. This helps to manage intra-abdominal pressure.

Tips on how to do this safely:

- sit close to the front edge of the chair and prepare yourself to stand up;
- position feet flat on the floor, hip distance apart, remove any trip hazards or slippery/unstable footwear;
- inhale to prepare and then exhale and stand, using the power of the legs. Do not hold breath or bear down; and
- have an aid or something to hold on to to the side, if necessary.

Getting in and out of bed

Individuals should be taught how to get in and out of bed in a way that reduces straining on their abdominals or increasing intra-abdominal pressure as they move. Ideally teach this prior to surgery, or signpost to a video so an individual can practice the technique.

Tips on how to do this safely:

- use the *side roll* technique;
- to get out of bed, take the bed down to the flattest position. Then from a supine (laid on back) position with knees bent, roll over onto the side of the body, keeping the head on the bed for support;
- use arms to push up sideways into a sitting position, slowly lowering legs one by one over the side of the bed;
- move to edge of bed and stand;
- reverse the technique to get back into bed; and
- take it slowly, pausing at each step.

Refer to the ASCN UK YouTube Channel EXPASS.

Getting on and off the Floor

The ability to get on and off the floor easily should be assessed for individuals engaging in floor-based exercises, including Pilates and core exercises. Correct technique should be taught or reinforced so individuals can transfer to the floor and back up again easily. If significant struggle and strain is evident, due to body weight or lack of mobility or strength, alternative activities in standing or seated positions should be considered. Significant strain and struggle may cause an unwanted increase in intra-abdominal pressure and increase hernia risk.

Lifting, Pushing, and Pulling

Tips on how to do this safely:

- exhale when lifting, pushing, or pulling anything at the point of effort/exertion, do not hold breath;
- engage with core muscles when lifting, pushing, or pulling and create tension in the lower abdominals and pelvic floor;
- keep item close to the centre of the body, position body in relation to the item to prevent awkward twisting, and stand tall with good posture;
- use the strength of the arms to lift, push, or pull rather than straining. Bend the elbows and use the strength of the arms;
- modify the load by splitting the load (shopping in multiple bags or multiple small loads of laundry);
- with mobile children, encourage them to climb in and out of the car or on and off chairs if safe and appropriate rather than lifting them; and
- lift items from a worktop, chair, or table height rather than the floor.

APPENDIX 7 ILLUSTRATED CORE EXERCISES

These illustrations show examples of exercises that can be done at each level. The exercises here are shown as examples; there may be many other suitable similar exercises with different names and descriptions. Use the **Self-Evaluation Assessment Tool** as a guide for step progression and appropriateness. The levels provide a general guide to show increasing demands of specific abdominal and core exercises. Exercises and levels are loosely based on the APPI Clinical Pilates Program progressions and descriptions. Examples of the core-specific exercises are not exhaustive and other similar exercises may also be appropriate. If you are not sure what these exercises entail, then speak to an exercise professional or physiotherapist. Illustration or example of an exercise does NOT mean this is a prescription and the exercise is appropriate for every individual. Each individual (and ideally together with their exercise professional or physiotherapist) will make an informed choice about the appropriateness of any specific exercise. Use the **Self-Evaluation Assessment Tool** as the main guidance.

Examples of Core-Specific Exercises by Level (not all exercises mentioned are illustrated)

Level 1

Breathing mechanics (supine, side, seated, standing). Knee rolls, single leg slide, pelvic tilt, overhead reach, knee drop.

Exercises in this level will keep both the head and feet down on surface at any time.

Level 2

Breathing mechanics (quad position). Single knee lifts (scissors), bridge, cat/cow, knee drop (single leg 90/90), pelvic tilt in quad, one leg stretch, overhead reach + leg slide, seated knee lifts, standing calf raises, mini squats.

Exercises in this level will usually keep head down but ONE foot may lift at a time.

Level 3

90/90 tabletop, dead bug, abdominal prep (curl up) with straight legs, leg stretch from 90/90, modified plank (on knees long arm), side plank on knees, side knee drop from 90/90.

Exercises in this level may involve a small head lift OR both feet lifted into 90/90 tabletop, but NOT both head and feet together. Modify using a Pilates ball or bands for support.

Level 4

90/90 tabletop with head lift, half roll back, long arm plank (no hold), bear/hover plank, oblique curl, side plank on feet.

Exercises in this level may involve a small head lift OR both feet lifted into 90/90. Occasionally lift both head and feet together for short duration. Modify using a Pilates ball or bands for support.

Level 5

Plank long arms, plank variations (with knee drop), full roll up and down (supine), oblique bicycling, curl ups, 100s, farmers walk.

Exercises in this level may involve lifting both head and feet at the same time for a longer duration. Modify using a Pilates ball or bands for support.

Level Advanced

Planking (on elbows, long duration), Russian Twists, V sits, anchored feet sit ups, straight leg lower/lifts (on back), hanging knee lifts, hanging straight leg lifts, crunch machines in gym, prone roll out on ball/sliders or wheel, wood chop (cable or weight). **Some may not be appropriate for an individual. Use the Self-Evaluation Assessment Tool.**

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ASSOCIATION OF STOMA CARE NURSES UK (ASCN UK)

https://ascnuk.org

ASCN UK is the only national professional organisation in the UK that focuses on supporting and advancing the profession of specialist stoma care nursing across the UK. ASCN UK seeks to raise the profile and value of the specialism of stoma care, by promoting national consistency in clinical practice and working to evidenced based standards of care for all individuals living with a stoma.

ASCN UK membership provides a platform for specialist stoma care nurses (SSCN) to gain professional support, continuing education, access to expert clinical resources, networking and sharing evidenced based best practice among both newly qualified and experienced SSCN's. ASCN UK aims to ensure that the art and science of stoma care nursing continually evolves as a profession, therefore ensuring all relevant health care professionals and carers are well-equipped with the necessary skills, knowledge, and resources to deliver and improve outcomes of care for individuals living with a stoma.

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