



A Community Healthcare Professional Guide to the Nutritional Management of Patients During and After COVID-19 Illness

The severe symptoms and consequences of COVID-19 may exacerbate malnutrition already present but may also predispose a previously well-nourished patient to the risk of malnutrition as a result of elevated nutritional requirements associated with infection arising at a time when appetite is diminished¹. This highlights the importance of nutritional screening and the provision of good nutritional care during this pandemic.

Whilst 32% of COVID-19 cases will require hospitalisation, 68% of those affected will remain in the community². Within the community, disease related malnutrition is prevalent amongst those of older age and those with chronic diseases³, underlying malnutrition in these patients may impair the immune response⁴ and further worsen COVID-19 severity. In addition individuals who have been discharged from hospital may need ongoing nutritional rehabilitation.

The Malnutrition Pathway has collated expert consensus, best practice and available evidence to support community healthcare professionals during COVID-19. The information on these pages has been designed to assist healthcare professionals in identifying nutritional issues, including the likelihood of malnutrition, when undertaking virtual consultations, in patients who are under their care. The resources - a pathway of care to support healthcare professionals and corresponding patient leaflets - are intended to help provide timely and appropriate nutritional advice. It includes dietary advice and use of oral nutritional supplements (ONS) where required, to support patients during and after an infection of COVID-19, who are being cared for at home or who have been recently discharged from hospital.

The information in this document is derived from the Managing Malnutrition in COPD and Managing Malnutrition in the Community patient materials, taking into account what we know about the nutritional management of patients with COVID-19 at the time of development (June 2020). It is aimed at adults and does not include advice on enteral tube feeding. It should not replace individual advice from a qualified dietitian (check patient's medical record).

(See <https://www.bda.uk.com/resource/top-tips-for-prescribing-oral-nutritional-supplements-and-enteral-feeds-in-the-community-for-adults-and-paediatrics.html> for further information on enteral feeding.)

Reasons Why COVID-19 Can Affect Dietary Intake

Respiratory Issues

Respiratory issues observed in severe cases of COVID-19 have a similar presentation to infective exacerbations of respiratory diseases such as chronic obstructive pulmonary disease (COPD). Symptoms that can affect dietary intake include:

- Coughing and breathlessness⁵
- Gas trapping and early satiety, caused by gulping air whilst eating⁵
- Dry mouth due to breathing through the mouth, use of inhalers and oxygen therapy⁵

Changes to Taste and Smell

Loss of taste and smell have been reported in patients with COVID-19^{6,7} and may further impact appetite and desire to eat.

Temperature and Infection

The infection triggers an inflammatory response and a rise in body temperature⁷ which can suppress appetite and alter metabolism, increasing the need for specific nutrients and fluid when intake may be poor⁸.

Fatigue and Weakness

COVID-19 may lead to muscle weakness and fatigue, impacting on a patient's ability to undertake normal activities of daily living, such as shopping and cooking.

Isolation

Social distancing and self-isolation may impact nutritional intake e.g.:

- Poor food availability and accessibility for those who struggle to go to the shops
- Lack of visits from family or friends to provide food, company and feeding assistance
- Cancellation of social lunch clubs

Malnutrition Screening

Screening for malnutrition across all settings, including the community, in patients with and recovering from COVID-19, is key to maximise recovery from the illness. Use of a validated screening tool such as the Malnutrition Universal Screening Tool (MUST)⁹ is usually recommended.

During the COVID-19 pandemic, healthcare professionals have had to radically change their way of working, in many cases moving to remote consultations. Identifying the risk of malnutrition usually relies on recording current weight, previous weight and height, to calculate body mass index (BMI) (step 1 of 'MUST') and percentage unintentional weight loss (step 2 of 'MUST'). For people in the community during the COVID-19 pandemic, if physical measures are not possible it is recommended¹⁰:

1. To use patient reported values of current weight, height, and previous weight to calculate Step 1 and Step 2 of 'MUST'
2. Where it is not possible to obtain physical or self-reported measures of weight or height there are a series of subjective criteria that can be used to form a clinical impression of an individual's malnutrition risk category (see subjective criteria table below):

Subjective Criteria¹⁰

BMI

- Clinical impression – thin, acceptable weight, overweight. Obvious wasting (very thin) and obesity (very overweight) can be noted

Unplanned weight loss (particularly relevant in patients with COVID-19)

- Clothes and / or jewellery have become loose fitting
- History of decreased food intake, reduced appetite and/or dysphagia (swallowing problems) over 3-6 months, underlying disease or psycho-social/physical disabilities likely to cause weight loss
- COVID-19 infection is very likely to cause unplanned weight loss if food intake is reduced by the effects of the disease and its management e.g. anorexia, breathlessness, impact of management options (sedation, continuous positive airway pressure (CPAP)/non-invasive ventilation (NIV), changes to taste and smell, psychological factors (e.g. anxiety), social restrictions

Acute disease

- If a patient is acutely ill with COVID-19 and is unlikely to have no nutritional intake for more than 5 days or has had no nutritional intake for more than 5 days.

Use the combination of subjective criteria to estimate a malnutrition risk category (low, medium or high) based on your overall evaluation.

The following questions can assist in obtaining information to form this clinical impression and help you select the most appropriate dietary advice resources:

- How is your appetite lately? How are you managing with your eating and drinking?
- How would you describe your weight? What is a usual weight for you?
- Do you feel like your weight has changed in the last few weeks or months?
- How are your clothes and jewellery fitting? Do they feel like they fit differently to usual?

The Malnutrition Pathway COVID-19 resource finder on pages 6 & 7 uses a series of prompts to assist you in choosing the information most appropriate for your patients based on either a 'MUST' score or appetite and weight descriptor.

Dietary Advice & Considerations

Patients with COVID-19 may struggle to meet their nutritional requirements due to the presence of some or all of the nutritional challenges that can affect dietary intake (for more information see typical symptoms of COVID-19 section). A range of strategies may need to be considered to provide adequate nutrition support to people during and after COVID-19 illness.

The COVID-19 dietary advice leaflets are intended to give general advice on the optimisation of intake in those with a poor appetite and include ideas for individuals on getting the most out of their food when they are unwell. These include tips on:

- maintaining a balanced diet
- protein - which may warrant special attention due to increased needs for protein during illness and recovery¹². Further information on the evidence-based guidelines for protein requirements in ageing and disease can be found in the leaflet 'Information to help meet protein needs: A healthcare professional fact sheet' at <https://www.malnutritionpathway.co.uk/library/protein.pdf>
- making the most of food via food fortification when required
- meeting vitamin and mineral requirements during illness and when appetite is poor – supplementation may be required¹
- the importance of vitamin D and supplementation, particularly in those who are spending a lot of time indoors. It is recommended that adults take a supplement containing 400 international units (IU) [10 micrograms] of vitamin D per day¹¹.
- the incorporation of oral nutritional supplements into the diet when prescribed or self-purchased
- eating when short of breath
- managing dry mouth
- managing changes or loss in taste and smell
- getting the foods you need (including social care support)

Consideration should also be given to the ability of the patient or their carer to act on the dietary advice given, with regular monitoring built into clinical reviews. Care should be taken with food-based strategies to ensure adequate provision of protein, vitamins and minerals¹³.

Underlying Conditions

Be alert to the presence of underlying conditions, such as diabetes, which may make patients prone to severe infections of COVID-19. Erratic blood glucose levels in these patients can arise secondary to the inflammatory response and insulin resistance¹⁴. The relevance of dietary advice previously provided may need to be considered, reassessed or relaxed in the presence of a poor appetite / unintentional weight loss. Blood glucose levels should be monitored and managed to minimise the risk of systemic complications⁸. Medications and insulin regimens may need to be reviewed by the diabetes team both during and after illness, if a significant amount of weight is lost. Equally those on blood pressure medication may require adjustments to dose and type. Referral to speech and language therapy should be made for patients with dysphagia or swallowing difficulties.

Always use clinical judgement in using the Malnutrition Pathway COVID-19 resources in those with complex conditions which may require referral to a dietitian for specialist dietary advice.

Oral Nutritional Supplements (ONS) – when Dietary Advice is not Enough

ONS may be required in those with a medium or high risk of malnutrition especially when intake is severely impacted in the short-term such as during an infection or after a hospital admission. Good quality evidence⁴ shows that ONS increase intakes of energy, protein and micronutrients without suppressing appetite. ONS should be used in addition to normal diet and not as a food replacement³. Further information on flavours and formats of products can be found at <https://www.malnutritionpathway.co.uk/library/ons.pdf>

In COVID-19 it is important to consider the specific nutritional needs of the patient. The British Dietetic Association (BDA) has developed guidance for prescribing ONS in the community, which highlights that local teams should review formularies to see if additional products need to be added that would support patients suffering / recovering from COVID-19¹⁵ (<https://www.bda.uk.com/resource/top-tips-for-prescribing-oral-nutritional-supplements-and-enteral-feeds-in-the-community-for-adults-and-paediatrics.html>)

The European Society for Parenteral and Enteral Nutrition (ESPEN) recommends giving ONS to COVID-19 patients that provide at least 400 kcal/day and ≥30g protein/day when oral intake is insufficient to meet estimated nutritional requirements¹. High protein ONS may be required to achieve this particularly amongst older patients, those with chronic conditions³, and in patients who have been discharged from an intensive care unit (ICU)¹⁶.

If there is ongoing concern regarding breathlessness, fatigue or if patients are using a mask or nebulisers regularly then a ready-to-drink, high energy, low volume ONS could be considered to reduce the time/effort needed to prepare and consume the ONS.

The BDA provides further information on patients discharged from hospital on oral nutritional support¹⁶ <https://www.bda.uk.com/resource/practical-considerations-for-nutritional-management-of-non-icu-covid-19-patients-in-hospital.html>

Ensure ONS prescription requests meet the Advisory Committee on Borderline Substances (ACBS) indications, goals have been set and arrangements are in place for review either by community dietetic services, general practitioner (GP) or other community healthcare professional.

Patients with swallowing problems may require specialised pre-thickened ONS or thickening powders. Dysphagia can affect up to a third of patients who have been cared for in intensive care and required mechanical ventilation. These patients should be assessed. If there are suspicions of dysphagia (dysphagia guide: <https://www.malnutritionpathway.co.uk/dysphagia.pdf>) consult a dietitian and/or a speech and language therapist.

Considerations Regarding Self-Purchase and use of Powdered ONS

A number of nutritional supplements are available for self-purchase in supermarkets, pharmacies and online. Consider how accessible these may be in the COVID-19 pandemic.

Before recommending powdered ONS to patients consider the following^{17,18}:

1. Clinical appropriateness
2. Does the patient/carer have the physical ability to make up?
3. Does the patient/carer have access to both a fridge and fresh milk?
4. Does the patient have adequate storage for milk and boxes of powder?
5. Can the patient/carer make up the powdered ONS as directed on the package to ensure safe handling practice?

If there is concern with the above, then a ready-made ONS may be more appropriate.

When to Stop an ONS Prescription³

Consideration of stopping an ONS prescription should be made when:

- Goals of intervention have been met
- Individual is clinically stable/acute episode has abated
- Individual is back to their normal eating and drinking pattern and is no longer at risk of malnutrition
- No further intervention would be appropriate

Additional Support - for complex patients, those at high risk of malnutrition and those who are at medium risk of malnutrition who do not improve despite preliminary intervention, consider a dietetic referral.

Goal Setting & Monitoring

Patient centred goals should be discussed and agreed, including what matters to the patient¹⁹, for those patients offered nutrition support, including dietary advice with or without oral nutritional supplements. It may be difficult to monitor patients if this has to be done remotely but such goals could include:

- During acute illness: minimise loss of weight / muscle mass / strength
- In recovery from illness:
 - o Gain muscle mass / patient feeling stronger
 - o Return to a desirable weight
 - o Resume normal hobbies
 - o Improve stamina e.g. ability to walk up the stairs without feeling breathless or to walk further for longer
 - o Achieve functional independence

Patients receiving any form of oral nutrition support should be regularly reviewed against goals set and agreed to assess progress and understand if any nutrition support strategies can be stopped or need starting. In the case of COVID-19 patients the interval should be based on clinical judgement taking into account severity of disease and malnutrition risk; this might range from a 1-week interval to 3 months.

Monitoring can include:

- o Weight / BMI – self reporting of weight and height is considered reliable¹⁰
- o Functional tests such as sit to stand
- o Self-reported activity and ability to undertake activities of daily living
- o Patient's report of progress towards goals agreed
- o Compliance to dietary advice and ONS

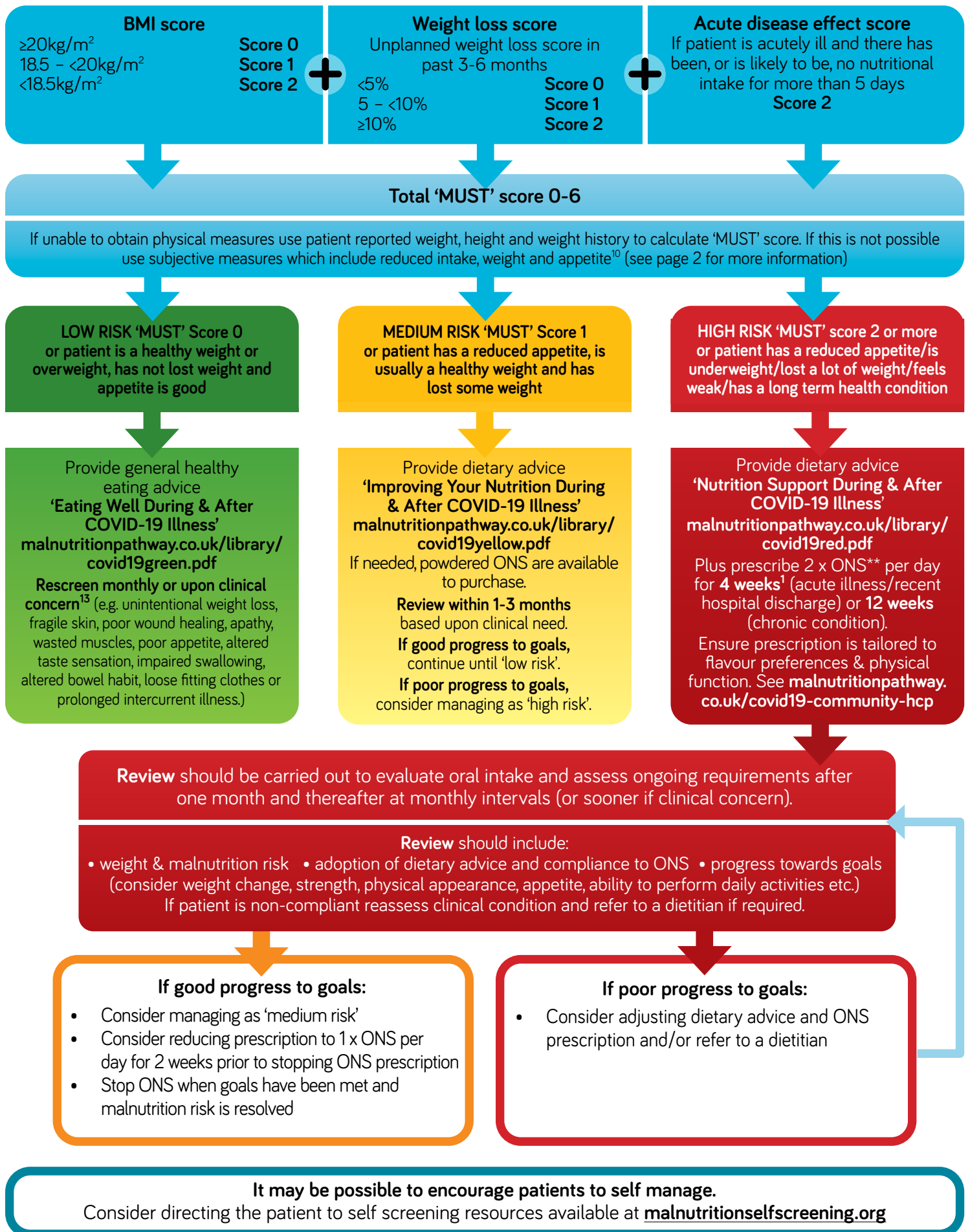
COVID-19 Illness Community Support Pathway using 'MUST'

The COVID-19 Illness Community Support Pathway aims to assist community healthcare professionals in the identification and management of patients who are at nutritional risk during or after COVID-19 illness patients (see page 5).

Please refer to the local department of nutrition & dietetics or community dietitians where necessary.

Malnutrition Pathway COVID-19 Illness

Community Nutrition Support Pathway using 'MUST'*⁹



Patient information sheets and a useful tool to enable individuals who have or have had COVID-19 to identify the nutritional advice leaflet that is most suitable to their needs can be found at malnutritionpathway.co.uk/covid19

* The 'Malnutrition Universal Screening Tool' ('MUST') is used here with the kind permission of BAPEN (British Association of Parenteral and Enteral Nutrition). For more information see bapen.org.uk

**Patients with dyspnoea/breathlessness may benefit from a compact or low volume supplement

Malnutrition Pathway COVID-19 Resource Finder:

Patients who are at home with symptoms of COVID-19 illness or who are recovering from COVID-19 illness

'MUST' Score = 0 Otherwise well/good appetite/no weight loss



Provide 'Eating Well During and After COVID-19 Illness' leaflet

This leaflet aims to raise awareness of the importance of a healthy diet, and provide advice on accessing foods during social distancing.

Patients should also be encouraged to take regular exercise.

<https://www.malnutritionpathway.co.uk/library/covid19green.pdf>

'MUST' Score = 1 Reduced appetite/usually a healthy weight/lost some weight



Provide 'Improving Your Nutrition During and After COVID-19 Illness' leaflet

This leaflet provides dietary advice to optimise intake and includes a range of ideas to help patients and carers achieve an adequate intake of protein, as well as energy and micronutrients, whilst helping patients to manage symptoms such as breathlessness, changes to taste and smell, weakness and fatigue.

Note: Nutritional supplements are available on prescription and for self-purchase and may be useful in addition to the diet.

See section on self-purchase and powdered nutritional supplements in [oral nutritional supplements section](#) on page 3 more information.

<https://www.malnutritionpathway.co.uk/library/covid19yellow.pdf>

'MUST' Score ≥ 2 Underweight/reduced appetite/lost a lot of weight/long-term health condition



Provide 'Nutrition Support During and After COVID-19' leaflet

This leaflet provides dietary advice to optimise nutritional intake whilst helping patients to manage symptoms such as breathlessness, changes to taste and smell, weakness and fatigue, along with guidance to incorporate oral nutritional supplements (ONS) into the diet.

Where dietary advice is inadequate to meet nutritional requirements in those with high risk of malnutrition² and those with COVID-19¹ it is recommended ONS should be prescribed.

See section on self-purchase and powdered nutritional supplements in [oral nutritional supplements section](#) on page 3 more information.

<https://www.malnutritionpathway.co.uk/library/covid19red.pdf>

Patient Recovering at Home after a Hospital Stay for COVID-19 Illness

For patients with COVID-19 who have required hospital admission, screening for malnutrition at the point of hospital discharge to assess their ongoing need for nutrition support at home, and review by a dietitian, is recommended to determine the need for nutritional management including the provision of and continuation of ONS on prescription¹. Care should be coordinated between the acute and community settings.

Local formularies should be reviewed, in conjunction with the local dietetic team and Clinical Commissioning Group (CCG)/Health Board, to ensure appropriate ONS are available to support the rehabilitation of COVID-19 patients¹⁵. ESPEN recommends the consideration of a high protein, low volume supplement¹.

Local policies for discharge of patients requiring on-going oral nutrition support in the community can still be applied but may need to be adapted to provide more bespoke guidance on managing patients recovering from a COVID-19 infection, to meet increased demand or support those where discharge is rapid.

Patients should receive information about how to access ongoing food supplies/food deliveries especially where help from family is not available and patients need to be shielded. In some areas hospitals are providing discharge food packs, in other areas local authorities are providing support.

'MUST' Score = 0 Treated on a general ward/feels better/appetite good/no weight loss

Provide 'Eating Well During and After COVID-19 Illness' leaflet

This leaflet aims raise awareness of the importance of the importance of a healthy diet, and provide advice on accessing foods during social distancing.

Patients should also be encouraged to take regular exercise.

<https://www.malnutritionpathway.co.uk/library/covid19green.pdf>



'MUST' Score = 1 Treated on a general ward/reduced appetite/lost some weight

Provide 'Improving Your Nutrition During and After COVID-19 Illness' leaflet

This leaflet provides dietary advice to optimise intake and includes a range of ideas to help patients and carers achieve an adequate intake of protein, as well as energy and micronutrients, whilst helping patients to manage symptoms such as breathlessness, changes to taste and smell, weakness and fatigue.

Note: Nutritional supplements are available on prescription and for self-purchase and may be useful in addition to the diet.

See section on self-purchase and powdered nutritional supplements in [oral nutritional supplements section](#) on page 3 more information.

<https://www.malnutritionpathway.co.uk/library/covid19yellow.pdf>



'MUST' Score > 2 Treated on a general ward/reduced appetite/underweight/lost a lot of weight/long-term health condition

Provide 'Nutrition Support During and After COVID-19' leaflet

This leaflet provides dietary advice to optimise nutritional intake whilst helping patients to manage symptoms such as breathlessness, changes to taste and smell, weakness and fatigue, along with guidance to incorporate oral nutritional supplements (ONS) into the diet.

Where dietary advice is inadequate to meet nutritional requirements in those with high risk of malnutrition² and those with COVID-19¹ it is recommended ONS should be prescribed.

See section on self-purchase and powdered nutritional supplements in [oral nutritional supplements section](#) on page 3 more information.

<https://www.malnutritionpathway.co.uk/library/covid19red.pdf>



Treated in intensive care: please go to the following page

Treated in intensive care

For those who required critical care, long-term nutritional problems can persist after hospital discharge including:

- Prolonged hypermetabolism and catabolism (muscle breakdown)²⁰
- Poor appetite^{16,21-23} lasting around 3 months²¹
- Dysphagia, affecting around 50% of patients post-extubation and taking up to 3-6 months to recover²⁴
- Frailty²⁴ and ICU-acquired weakness (ICUAW), characterised by loss of muscle mass and strength, occurring in approximately 46% of patients²⁵ and lasting up to 2 years following ICU discharge²⁶

Tailored nutritional management is recommended for patients recovering from ICU after hospital discharge. Individuals should remain under the care of either the hospital or community healthcare team who can provide advice on recovery. If this has not been provided it is suggested the hospital or community dietetic department is contacted for further advice. Other specialist services, such as psychology and physiotherapy, may be required for patients recovering from ICU. Refer to local pathways/policy. The Nutrition Support During and After COVID-19 leaflet (<https://www.malnutritionpathway.co.uk/library/covid19red.pdf>) may be helpful but should not over-ride advice from your hospital rehabilitation team or dietitian. If the individual is not under the care of any specific team it is suggested the local dietetic department is contacted for further advice.

The BDA Critical Care Specialist Group has produced specific advice for patients further to critical illness - <https://www.bda.uk.com/resource/nutrition-at-home-after-critical-illness.html>

Patients should receive information about how to access ongoing food supplies/food deliveries especially where help from family is not available and patients need to be shielded. In some areas hospitals are providing discharge food packs, in other areas local authorities are providing support. Refer to <https://www.bda.uk.com/resource/critical-care-dietetics-guidance-covid-19.html> for further information.

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Key Resources

A number of professional organisations have produced resources for healthcare professionals in relation to nutrition and COVID-19. These are based on expert consensus and are being updated as the crisis evolves:

British Dietetic Association (BDA) Resources

The BDA Specialist Groups have begun producing clinical guidance and recommendations in a range of areas to support dietitians working to tackle the COVID-19 pandemic. <https://www.bda.uk.com/practice-and-education/covid-19-coronavirus-clinical-guidance.html>

The British Association for Parenteral and Enteral Nutrition (BAPEN)

The BAPEN groups and committees have compiled a number of resources and guidelines <https://www.bapen.org.uk/resources-and-education/education-and-guidance/covid-19> These include:

- Home Parenteral Nutrition guidelines - produced by the British Intestinal Failure Alliance (BIFA)
- Practical Advice and Guidance for management of nutritional support during COVID-19 produced by the National Nurses Nutrition Group (NNNG) special interest group of the British Association for Parenteral and Enteral Nutrition (BAPEN) has developed guidelines
- Identifying Malnutrition during the COVID-19 Pandemic – a Malnutrition Action Group (MAG) update

ESPEN

The European Society for Parenteral and Enteral Nutrition (ESPEN) has produced a number of expert statements and practical guidelines including 'A practical guidance for nutritional management of individuals with sars-cov-2 infection'. <https://www.espen.org/component/content/article/30-news/283-coronavirus-word-from-the-espen-chairman?Itemid=104>

ASPEN

The American Society for Parenteral and Enteral Nutrition (ASPEN) has also produced some useful resources for clinicians caring for patients with coronavirus. https://www.nutritioncare.org/Guidelines_and_Clinical_Resources/Resources_for_Clinicians_Caring_for_Patients_with_Coronavirus/

CLINICAL DIETETICS

The clinical dietetics online network is posting materials and guidelines related to COVID- 19 and includes a discussion thread so those around the world providing crucial nutrition support for these patients can connect, share practice & support each other. <https://www.clinicaldietetics.online/landing?from=https%3A%2F%2Fwww.clinicaldietetics.online%2Ffeeds>



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This document has been produced by a multi-professional panel of healthcare professionals experienced in working with malnourished patients. (see <https://www.malnutritionpathway.co.uk/about-us> for more information.)

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