



ISSUE 11 | MARCH 2020

## What is a 'normal' healthy bowel habit, and do the general public have a different view?

This thought-provoking article addresses some current perceptions of constipation and how simple dietary fibre changes may be more beneficial than the general public currently realise. Dietary fibre recommendations are determined to support normal laxation<sup>1</sup>. But since such a high proportion of the population are not consuming enough fibre to meet well established recommendations<sup>2</sup>, and are likely never to have done so, could this mean that an individual's perception of their 'normal bowel habit' is in fact sub-optimal, or even reflect a mild constipated state?

### IS 'NORMAL' PURELY THE ABSENCE OF SYMPTOMS THAT WE PERCEIVE TO BE ABNORMAL?

How many clients have said to you that they 'eat plenty of fruit and vegetables' in their diets and then seem shocked when a dietary assessment suggests otherwise? How many times have your clients explained that if they eat more fruit and vegetables their 'guts play up' or they feel they 'become too loose'?

Do we need to improve general understanding of what an optimal bowel habit presents as, in order to achieve optimal plant food (fruit, veg and wholegrain) intakes and support clients to improve their diets? Albeit there's not one specific optimal bowel habit profile, but more a range of normal expectations (table 1).

Constipation and diarrhoea are extreme ends of the spectrum, and indicate abnormal bowel habits. This article focuses only on constipation, which is a large socio economic burden with significant health care costs: in the UK up to 1 in 7 adults and 1 in 3 children are affected by constipation; £162 million is spent annually by the NHS on treating constipation; there are >200,000 weekly bowel-related GP consultations; and more than 71,000 constipation related hospital admissions each year<sup>3</sup>. The definition of constipation is based on symptoms and can be defined in various



ways, including chronic or functional constipation (long standing constipation-related symptoms, with no physiological or anatomical cause) and constipation-predominant irritable bowel syndrome. Long term constipation can lead to faecal impaction, haemorrhoids and bowel incontinence<sup>5</sup>.

Whilst hard and lumpy stools and low stool frequency may suggest constipation, factors in

diagnosis are more diverse and go much further than simply 'stool consistency and frequency'. Furthermore, research suggests that differences exist in the perception and definition of constipation between adult consumers and health professionals, and constipation is frequently incorrectly recognised, with consumers often not realising that they are constipated (according to Rome IV criteria)<sup>4</sup>.

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# The importance of dietary fibre for laxation is clear<sup>1</sup>, yet a large proportion of the population are not consuming enough fibre<sup>2</sup>. Furthermore rates of constipation are high<sup>3</sup>: To what extent are these facts linked?

## Diagnosing constipation

Several authoritative diagnostic tools can be used to define bowel habits (including constipation) furthermore GP and specialist doctors may diagnose pragmatically and self-diagnosing also occurs.

## Perceptions of constipation

Professor Kevin Whelan's research team at Kings College London, conducted a large prospective, cross-sectional survey within the UK<sup>4</sup> of 2,557 adult consumers (the recruitment targeted those with self-reported constipation, so the sample was not representative of the general population as a whole), 411 GPs, and 365 gastroenterology specialists (224 gastroenterologists and 141 colorectal surgeons). The study explored, through four surveys, the complex relationship between constipation perceptions, symptoms and diagnosis; and how these vary between adult consumers and health professionals.

The consumers' group completed a survey to determine whether they had self-reported constipation and to explore their bowel habits, which the authors then compared to the Rome IV constipation criteria<sup>6</sup>. Constipation was self-reported by 36.5% of the adult consumers, however, overall 20.7% of the consumers group incorrectly self-reported their bowel habits based on the Rome IV criteria, with more consumers saying they weren't constipated when in fact they were. Interestingly 5 times more people incorrectly self-reported the absence of constipation (29%) verses those who incorrectly reported constipation (6%), despite the recruitment drive to 'attract' those with constipation.

Stool frequency and consistency differed across the groups, for example those with constipation (according to Rome IV) but who did not self-report, had more than 7.6 bowel movements weekly with stool consistency 3.3 on the Bristol stool form chart – which is seemingly 'normal' based on normal laxation<sup>1</sup> and BSFC criteria<sup>7</sup>. With different and somewhat contradictory criteria to define constipation (*table 1*), could this be confusing for the general population?

Perceptions of constipation symptoms were explored in all respondents selecting up to 5 (out of 33) symptoms that they considered important in the diagnosis of constipation.

Table 1: Defining bowel habits – a selection of accepted diagnostic criteria:

Source (not an exhaustive list)	Diagnostic Criteria
Rome IV <sup>6</sup>	Diagnostic criteria for functional constipation: At least 2 of the following for 3 months or longer with onset of symptoms at least 6 months before diagnosis: a. Straining during >25% of defecations b. Lumpy or hard stools (BSFS 1-2) >25% of defecations c. Sensation of incomplete evacuation for >25% of defecations d. Sensation of anorectal obstruction/blockage for >25% of defecations e. Manual manoeuvres to facilitate >25% of defecations (eg. digital evacuation, support of the pelvic floor) f. Fewer than 3 spontaneous bowel movements per week
Bristol Stool Form Scale (BSFS) <sup>7</sup>	BSFS provides a visual representation of 7 types of stool movements across the spectrum: - type 1&2 represent 'hard stools'; - types 3-5 are considered to be 'normal'; - types 6&7 represent loose/liquid stools.
European Food Safety Authority (EFSA) <sup>1</sup>	Considered adequate for normal laxation: - defaecation frequency of 1 per day; - intestinal transit of about 2-3 days; and - faecal moisture content of >70%
McCallum et al (2009) <sup>8</sup>	This BMJ review addresses chronic constipation in adults and states: 'We prefer a more inclusive definition of chronic constipation: any patient experiencing consistent difficulty with defecation.'

Although results indicated significant differences between each survey group, only three out of five symptoms included in the Rome IV criteria (straining, hard stools and infrequent bowel movements), featured in the top 5 of each group; and, interestingly, all groups reported the need to use laxatives as an important *symptom*.

When asked to rate how bothersome the 33 symptoms of constipation were, bloating, which is not part of Rome IV constipation diagnosis criteria, was perceived to be bothersome in 48% of the consumers with self-reported constipation; and perceived as a burden to patients by 32% GPs

and 42% of specialist doctors (when asked to rate up to 5 symptoms they understood to be a burden to their patients). Although bloating is described commonly across health media and is associated broadly with gut health issues, it is not included within formal diagnostic criteria for constipation<sup>4</sup>.

In terms of awareness of constipation, all participants were asked to diagnose the absence or presence of constipation in 10 case studies based on a range of symptoms. There was no indication that the doctors specialising in gastroenterology were any better at correctly diagnosing the case studies than the GPs or consumer group. Dimidi<sup>4</sup> concludes that "Education of the general population on the formal diagnostic criteria for constipation is needed, whereas education of healthcare professionals is also warranted regarding what patients perceive important for a diagnosis of constipation so that the most burdensome of symptoms can be adequately managed."

These results continue to support the important role dietitians play in contributing to this educational need and in providing expert knowledge to the general population and GPs/specialist doctors to help accurate recognition and management of dietary related constipation. Dietary and lifestyle factors can contribute to constipation, including principally: low fibre and fluid intakes; low activity levels; stress, anxiety or depression; ignoring 'the urge to go'; changes to diet or routine; pregnancy; and side effects of medication<sup>9</sup>.

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## Fibre

### History of fibre

Diets have evolved significantly over centuries from hunter-gatherer origins to most recently being influenced by the easy availability of a wide variety of foods, particularly low cost processed and convenience foods. Together with the modern snacking culture, these myriad factors have contributed to changes in our food (and drink) consumption patterns and therefore nutrient intake. Dietary fibre in particular remains undervalued as an essential nutrient and Western intakes tend to be lower than country specific recommendations.

Denis Burkitt, the 'Fibre Man', popularised the importance of fibre in the 1980s through his book 'Don't Forget Fibre in Your Diet'<sup>10</sup> following research and observations that Western diseases, which were rare in Africa, were caused by diet and lifestyle factors. His research built on the earlier work of others (Peter Cleave, GD Campbell, Hugh Trowell, Neil Painter, Alec Walker)<sup>11</sup>. Whilst the science has moved on greatly since the 1980s, the popularism of fibre has waxed and waned, according to changing 'diet' trends/fads. Audrey Eyton's high fibre F-Plan Diet<sup>12</sup> in the 80's was superseded by increasingly popular 'high protein' diets around the turn of the century<sup>13</sup> which then morphed into 'low carb' diets, but both had negative consequences for fibre intakes. The current trend is a shift towards more plant-based eating, influenced by sustainability and climate change agendas more so than personal health, although such diets have the potential to coincidentally improve fibre intakes. Increasing emphasis on the gut microbiome provides further support for the suggestion that diversity is crucial, which has resulted in the popular recommendation to consume 30 different plant-based foods per week<sup>14</sup>. It remains to be seen to what extent any health benefits of these trends are attributed directly to dietary fibre or other aspects of plant-based eating.

### Consequences of low fibre diets

Dietary fibre is important for bowel health, being useful in improving faecal bulk, transit and consistency. The EFSA recognise that 25g/day are needed for 'normal laxation' and further recognise additional benefits to health with higher intakes, (including reduced risk of coronary heart disease and type 2 diabetes, and improved weight maintenance)<sup>1</sup> and for these reasons, the UK recommends daily fibre intakes of 30g<sup>15</sup>. Furthermore, emerging evidence is exploring the role of fibre on the microbiome, specifically its ability to act as a

substrate to feed bacteria, and the knock-on effect this has on our health<sup>2</sup>. The benefits of fibre and consumption patterns were discussed in an earlier newsletter <https://www.californiaprunes.co.uk/wp-content/uploads/2019/10/CPB-HCP-Newsletter-Issue-8.pdf>.

Globally however, consumption of fibre is below 20g/day<sup>2</sup> so it would be reasonable to deduce that there is a large proportion of the general population not meeting the 25g/daily fibre recommendations for 'normal laxation', whose bowel habits are therefore by definition presumably NOT normal. Whether or not individuals are concerned about their current bowel habits, the longer-term health impact of low fibre intakes is significant.

### Fruit and vegetable intake

As well as providing a range of micronutrients and phytonutrients, it is recognised that fruit and vegetables can make important contributions toward daily fibre intake<sup>16</sup>. In the UK for example, adult daily fibre intake is around 19g/day<sup>17</sup>, with fruit providing around 8% (equivalent to approximately 1.5g fibre/day); vegetables 20%; and cereals and cereal products 38%. Other contributions to fibre include potatoes, meat, nuts, snacks, etc. Whilst fruits have in the past been viewed as less important due to their sugar content, diets low in fruit are listed as the 3rd risk factor for both deaths and burden of disease (after high blood pressure and smoking/second hand smoke); and diets low in vegetables are listed as 11th and 12th risk factors respectively<sup>18</sup>.

As with fibre, fruit and vegetable consumption remains lower than recommended despite national programmes to encourage intake. This is by no means a new message and, whilst the scientific community continues to research deeper in order to improve our knowledge of diet and health, it is easy to overlook the simple and most obvious of issues. Education around how increasing fibre in the diet can lead to *direct and beneficial* changes to stools, bowel habit and possibly even bloating symptoms, may be a worthwhile conversation for contributing to a healthier nation.

### Options to boost fibre intake and gut health:

- Increase fruit and vegetable intake
- Select wholegrains eg jumbo oats, wholemeal products, bulgar wheat, quinoa, wheat bran
- Include nuts and seeds, beans and pulses in the diet
- Snack on nuts and traditional dried fruits, eg prunes
- Select products with added fibre
- Increase plant food variety to feed your microbiome
- Choose whole fruits rather than fruit juices
- Ensure adequate fluid intake- especially whilst gradually increasing fibre
- Exercise and avoiding stress is also important for good gut health

### How can prunes help?

Prunes carry an authorised health claim<sup>19</sup> for contributing to normal bowel function based around consuming 100g prunes daily. Prunes are also classed as HIGH FIBRE, containing 7g fibre/100g that's 28% of the 25g daily recommendation for normal laxation! Just three prunes (30g) is equivalent to one portion of fresh fruit, with 2.1g fibre per portion.

Soluble and insoluble fibres are beneficial for our gut health – soluble fibre helps retain fluid, stimulate bacteria production and soften stools; and insoluble fibre provides bulk and stimulates the bowels – thus making stools easier to pass. California Prunes contain both soluble (3.9g/100g) and insoluble (3.2g/100g) fibres in useful amounts. Furthermore, prunes contribute to normal bowel function when 100g are eaten daily. The exact mechanism by which prunes exert their effect on the gut and the gut microbiota continues to be investigated through thorough research, but it is thought that prunes' fibre, sorbitol (which is slowly and poorly absorbed in the small intestine), and phenolic compounds play a role<sup>20</sup>.

With no seasonality constraints, a long shelf-life and relatively low cost, prunes are a versatile dried fruit that can easily be incorporated into plant-based diets, and enhance typical Western diets which are characterised by insufficient fruit, vegetable and wholegrains, and are low in fibre. Prunes can be eaten as a snack with or after a meal, and used as an ingredient to enhance sweet or savoury dishes. In meat dishes, prunes can increase moisture content and in bakery products they help to reduce the amount of added fat and sugar.

## Summary:

While research continues to understand symptoms associated with constipation, the bottom line is that many people do not recognise that their bowel habits may not be 'normal'. Increasing the overall fibre content of the diet towards recommendations could help significantly. Variety in the diet is needed to maximise the beneficial effects on our gut microbiome. Prunes can act as one convenient solution to achieving this aim, due to their high fibre content and their ability to contribute to normal bowel function.

Try this delicious, healthy and high-in-fibre recipe from California Prunes...

# Moroccan Carrot, Lentil & California Prune Soup

4 portions

55 mins prep and cook time



## INGREDIENTS

2 tbsp rapeseed oil  
1 tsp dried coriander  
1/4 tsp cinnamon powder  
3 medium-sized carrots, peeled, trimmed and diced  
100g ready-to-eat California Prunes, roughly chopped  
600ml vegetable or chicken stock  
1 tbsp chopped coriander  
1 tsp cumin  
1/2 tsp turmeric  
2 cloves of garlic, peeled and finely chopped  
150g dried red lentils  
400g can chopped tomatoes  
01-Feb lemon (Juice of)

## INSTRUCTIONS

1. In a large saucepan, heat the rapeseed oil over a medium heat. Add the onions, stir well to coat in oil, and reduce heat to low.
2. Cover and leave to soften – about 7 minutes.
3. Add all the spices and increase the heat slightly. Stir well, then leave for a minute or so to cook, before stirring well again.
4. Add the carrot and the garlic, stir to cover in the spices, then reduce the heat and cover, and leave for 5 minutes to soften.
5. Check after a couple of minutes, and if they are starting to stick to the bottom of the pan add a splash of water to loosen.
6. Add the lentils and the prunes, mix well, then stir in the tomatoes. Bring to the boil, then add the stock and stir well to mix.
7. Increase the heat until the soup starts to bubble, then reduce the heat and leave to simmer until all the vegetables are soft and the lentils have softened and collapsed – about 30 minutes.
8. Stir through the coriander, parsley, and lemon juice, then taste, and season with salt and pepper as necessary.
9. Ladle into warmed soup bowls and serve immediately.

Note: This soup can be pureed but it's more of a meal left chunky.

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