International Foundation for
Functional Gastrointestinal Disorders

IFFGD
PO Box 170864
Milwaukee, WI 53217
www.iffgd.org

Nonulcer Dyspepsia

By: W. Grant Thompson, M.D., F.R.C.PC.
Emeritus Professor of Medicine,
University of Ottawa, Canada

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"Dyspepsia [is] a symptom or set of symptoms that ... originate from the gastroduodenal region. The ... symptoms are postprandial fullness, early satiation, and epigastric pain or epigastric burning."

"Functional dyspepsia ... [consists of] one or more dyspepsia symptoms that ... originate from the gastroduodenal region, [without] any organic, systemic or metabolic disease ... to explain [them]."

– *Rome III*

Dyspepsia is Greek for "bad digestion." Like "indigestion" and "bilious" it conveys the sense that all is not well in the abdomen. Because of their ambiguity, these old terms have had little medical use. Uniquely "dyspepsia" has been resurrected to describe an important syndrome. It has come to mean a chronic or recurrent discomfort or pain centered in the upper abdomen, often related to meals. Physicians may suspect such pain to be that of a peptic ulcer.

Double Negative?

Unfortunately dyspepsia is best understood by what it is *not*. It does not embrace the severe, disabling attacks of upper abdominal pain due to gall bladder disease, nor the excruciating pain due to pancreatic disease that is also felt in the back. The pain is not cramping as it is in diseases such as Crohn's disease that obstruct the intestine. Unlike irritable bowel syndrome (IBS) it is unrelated to defecation, and it lacks the burning, retrosternal qualities of heartburn due to gastroesophageal reflux disease (GERD).

As indicated in the heading, there is another negative. Because there is no clear difference between dyspeptic symptoms described by those with stomach or duodenal ulcers and those without, we sometimes use the term "nonulcer dyspepsia" (NUD) to denote the latter. Thus, when a person is thought to have dyspepsia, the first order of business is to determine whether or not an ulcer is present. The identification and management of peptic ulcers have been discussed in the IFFGD factsheet *Peptic Ulcer: A Twentieth Century Disease*. In this article we are concerned with those dyspeptic patients who have no ulcer and no other structural gastrointestinal disease to explain their symptoms.

The Cause of Nonulcer Dyspepsia

Since there is no known structural disease associated with NUD, it is called a disorder of gastrointestinal function. Even here, the terminology is deceptive. The exact disturbance of function is undetermined. There are many hypotheses. Delayed gastric emptying, abnormal upper gut contractions, and hypersensitivity to distension of the stomach have each been blamed. Some patients with NUD have *Helicobacter pylori* (*H. pylori*), the bacteria responsible for ulcer disease. It should be treated with appropriate antibiotics and a proton pump inhibitor (PPI), but the NUD symptoms are seldom benefited. While these phenomena may be responsible for a few cases of NUD, none has been scientifically linked to NUD as a whole.

There have been attempts to separate NUD into subgroups known as *motility-like* and *ulcer-like* on the basis of the nature of the symptoms, but these have little scientific justification The Rome III working team identified 8 "dyspeptic" symptoms that illustrate the heterogeneity of this disorder (Table 1). Their criteria for functional dyspepsia requires at least one of four of these symptoms (Table 2). They further sub classify functional dyspepsia into the *post-prandial distress syndrome* and the *epigastric pain syndrome*, which are similar to the previous *motility-like* and *ulcer-like* categories mentioned above. Patients should not trouble themselves about these terminological inexactitudes. They are research rather than clinical tools and reflect the scientific community's difficulty in explaining the symptom. They serve as hypotheses whereby certain epigastric discomforts can be identified and tested for a possible cause.

NUD appears to be aggravated by personal stress, and some patients may also have depression or anxiety. Many drugs cause dyspepsia, notably nonsteroidal anti-inflammatory drugs (NSAIDS). Some individuals identify a certain food they feel to be the culprit. It is uncertain whether the food itself is at fault, or rather that memory of previous upsets, tastes, and smells associated with the food trigger symptoms. Fatty food delays gastric emptying and some people with dyspepsia may feel better when they avoid fried or other greasy foods.

Diagnosis of NUD

Dyspepsia is recognized by the subject's description of repeated episodes of upper abdominal discomfort, fullness or non-excruciating, non-crampy abdominal pain. Sometimes the symptom is related to meals, overeating, or stress. Careful history should exclude 'what dyspepsia is not'. We assume here that peptic ulcer and other intestinal disease have been excluded, often by an endoscopy, and that the dyspepsia is therefore 'non-ulcer'. There is no association with defecation as occurs with IBS even though these two disorders of gastrointestinal function may coexist. NUD lacks the burning quality of heartburn and is not worsened by bending or retiring after a large meal. As with all the disorders of gut function alarm symptoms such as bleeding, vomiting, difficulty swallowing, weight loss (over 5–10 lbs.), anemia, nutritional deficiencies, or physical findings in the abdomen are not caused by NUD and require investigation. A family history of gastrointestinal cancer, inflammatory bowel disease or celiac disease may be important, and caution is necessary in older patients especially if the dyspepsia is a new symptom.

Nonsteroidal anti-inflammatory drugs (also called NSAIDs) are used to relieve some symptoms caused by arthritis (rheumatism), such as inflammation, swelling, stiffness, and joint pain. However, this medicine does not cure arthritis and will help you only as long as you continue to take it.

Some of these medicines are also used to relieve other kinds of pain or to treat other painful conditions, such as:

- gout attacks;
- bursitis;
- tendinitis;
- sprains, strains, or other injuries; or
- menstrual cramps.

Ibuprofen and naproxen are used to reduce fever. Meclofenamate is also used to reduce the amount of bleeding in some women who have very heavy menstrual periods. Nonsteroidal anti-inflammatory drugs may also be used to treat other conditions as determined by your doctor.

Any nonsteroidal anti-inflammatory drug can cause side effects, especially when it is used for a long time or in large doses. Some of the side effects are painful or uncomfortable. Others can be more serious, resulting in the need for medical care and sometimes even death. If you will be taking this medicine for more than one or two months or in large amounts, you should discuss with your doctor the benefits of the drug as well as the risks of taking it. It is also a good idea to ask your doctor about other forms of treatment that might help to reduce the amount of this medicine that you take and/or the length of treatment.

—Source: Medline Plus Health Information, A Service of the National Library of Medicine

One strategy is to test all dyspeptic patients for the ulcer-predisposing organism *Helicobacter pylori* and treat the organism if it is found. If an ulcer is present it will be cured by treating the organism and if the symptoms improve, all the better. In North America, the prevalence of the organism is declining, and it is most common in people from developing countries. If *Helicobacter pylori* are present in the absence of an ulcer, eradication of the bacteria may be justified, but such eradication usually does little for the dyspepsia.

Treatment of NUD

As can be guessed from the foregoing, there is no specific treatment for NUD. If the patient is on drugs, their sequential withdrawal should be tried if feasible. Fats and other suspected food may be avoided for trial periods, and if *Helicobacter pylori* are present the infection should be treated. Depression or anxiety should be treated if present, and careful attention should be given to the possible role of stress. Sometimes it is difficult to distinguish NUD from heartburn and often the two coexist. If the symptom is due to gastroesophageal reflux, then it should improve with a trial of therapy of a proton pump inhibitor.

People suffering from NUD should carefully review their diet. Fast food and fat are difficult to digest. Some people are sensitive to very spicy foods. Others may suffer dyspepsia after excessive carbonated beverages, caffeine, or alcohol. As important as what we eat is how we eat it. A rushed lunch while contemplating or dealing with stressful tasks can compromise digestion. Frequent rising from the table to serve the children, or answer the telephone diverts the body's attention away from digestion such that intestinal blood supply may be compromised. Overeating should be avoided, and the day's meals should be organized so that most calorie intake is not left to the evening meal. Dyspeptic people should train themselves to eat slowly in quiet, healthy surroundings as far as possible removed from the daily stresses of life. A rest should follow meals. When the stomach is full, strenuous exercise or exertion is unwise.

Stress is part of life. However, many people with dyspepsia find that stressful circumstances precipitate or worsen their symptoms. Sometimes stress can be avoided. Otherwise relaxation exercises may help. These include deep breathing (not overbreathing) and sequential tensing and relaxing of muscles. Your doctor may help guide you. Drugs that act on the gastrointestinal tract offer very little for most people with NUD. In modest doses, antacids such as calcium carbonate are safe. Expensive prescription drugs that inhibit acid secretion such as the proton pump inhibitors and the histamine H_2 receptor antagonists make little sense, as acid secretion is not increased in NUD. As mentioned above, these drugs may be tried if GERD is suspected. Drugs that stimulate gastric emptying have been tried in patients with NUD, but have significant unwanted effects and many are not now readily available.

Only certain people with psychological difficulties will benefit from antidepressant or anti-anxiety drugs. If such problems are severe, the patient's doctor may suggest that a mental health professional be consulted.

A Simple Relaxation Technique

Breathing is the only bodily function that, in the normal state, is fully under automatic control by circuits in the central nervous system, but which can instantly be switched to conscious control. This unique property is probably responsible for the fact that for thousands of years, breathing techniques have been essential components of meditation techniques and healing practices.[1]

Typically, our breathing is either shallow and irregular (chest or thoracic breathing), or deep and regular (abdominal or diaphragmatic). Shallow chest breathing is often associated with muscle tension and distress. Deeper abdominal breathing, on the other hand, is associated with reduced muscle tension and relaxation. There are many breathing techniques that can be quickly and easily learned. While initially the positive effects are often subtle, benefits increase over time. Here is a simple breathing technique to enhance relaxation and release tension:[2]

1. Sit straight in a comfortable position with your arms and legs uncrossed
2. Breathe in comfortably into your abdomen. (If your are not used to diaphragmatic breathing, place your palm over your abdomen to feel it rise and fall with each breath.) Pause briefly before you exhale.
3. Each time your exhale, count silently to yourself, "One…two…three…four."
4. Repeat this cycle, counting your exhalations in sets of four, for five to ten minutes.
5. Notice your breathing gradually slowing, your body relaxing, and your mind calming as you practice this breathing technique.

1. Mayer, E. *The Neurobiology Basis of Mind Body Medicine*, IFFGD, 2000.

2. Davis, M., Eshelman, E., McKay M. *The Relaxation and Stress Reduction Workbook*, MJF Books, 1995.

What Comes Next

Most people with NUD will continue to suffer from dyspepsia from time to time. In some, a clear relationship with stress may emerge such as a presentation at work or an argument at home. Sometimes the symptoms may change and come to resemble another disorder of gastrointestinal function such as IBS. However, once a diagnosis of NUD is established, and important competing structural diseases are excluded by history with or without stomach endoscopy, there is no evidence that the disorder places one at greater than normal risk of peptic ulcer, cancer, or any other structural disorder. This reassurance should be important comfort to those whose dyspepsia continues. Nevertheless, the physician should be alert to the appearance of new symptoms and signs that might suggest a structural disease.

References

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Suggested Reading

Thompson WG. *Peptic Ulcer: A Twentieth Century Disease.* IFFGD. Fact Sheet No. 509.

Katz PO. *Medical Management of GERD: The Proton Pump Inhibitors.* IFFGD. Fact Sheet No. 505.

Thompson WG. Understanding the Irritable Gut: The Functional Gastrointestinal Disorders. Degnon Associates. McLean VA. Chapter 10, 2008.

Table 1

Dyspeptic
Symptoms and their Definition

Symptom	Definition
Epigastric pain	Epigastric is the region between the umbilicus and lower end of the sternum, and bordered by the mid-clavicular lines. Pain refers to a subjective, unpleasant sensation; some patients may feel that damage is occurring. Epigastric pain may or may not have a burning quality. Other symptoms may be extremely bothersome without being interpreted by the patient as pain.
Postprandial fullness	An unpleasant sensation like the prolonged persistence of food in the stomach
Early satiation	A feeling that the stomach is overfilled soon after starting to eat, out of proportion to the size of the meal being eaten, so that the meal cannot be finished. Previously, the term "early satiety" was used, but satiation is the correct term for the disappearance of the sensation of appetite during food ingestion.
Bloating in the upper abdomen	An unpleasant sensation of tightness located in the epigastrium; it should be distinguished from visible abdominal distension.
Epigastric burning	Burning refers to an unpleasant subjective sensation of heat. (Similar to heartburn – epigastric burning may be due to gastroesophageal reflux.)
Nausea	Queasiness or sick sensation; a feeling of the need to vomit.

Vomiting	**Forceful oral expulsion of gastric contents associated with contraction of the abdominal and chest wall muscles. Vomiting is usually preceded by and associated with retching, repetitive contractions of the abdominal wall without expulsion of gastric contents.**
Belching	**Venting of air from the stomach or the esophagus.**

Note that bloating, nausea, vomiting and belching are not included in the criteria (Table 2). They are not specific to dyspepsia and may accompany it by coincidence.

Adapted from Table 2, Chapter seven, Rome III

Table 2

Diagnostic Criteria for Functional Dyspspsia

Must include:

1. One or more of the following:

- **a. Bothersome postprandial fullness**
- **b. Early satiation**
- **c. Epigastric pain**
- **d. Epigastric burning**

AND

- **2. No evidence of structural disease (including at upper endoscopy) that is likely to explain the symptoms**

* Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis

Rome III
