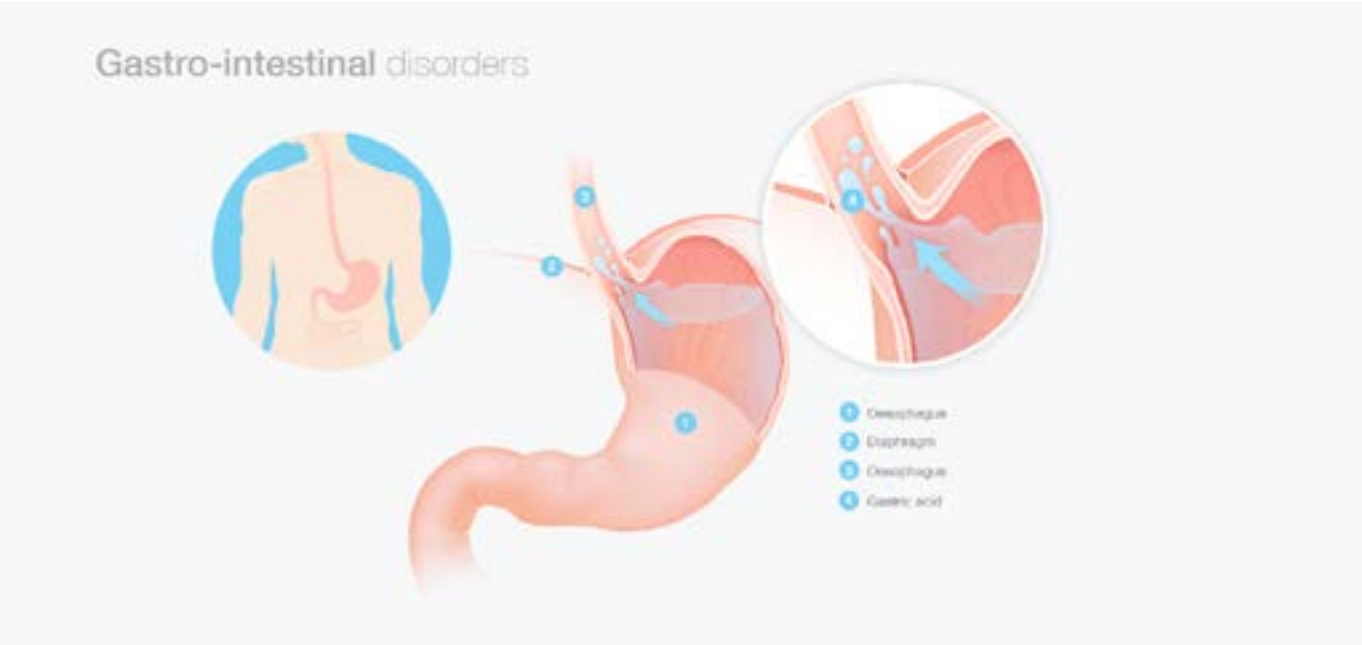
diabetes



Diabetes is a chronic disease that is characterised by a failure in the regulation of glycemia and an excess of sugar in the blood.

For a diabetic person, the pancreas lacks to produce or produces too little insulin which is the hormone that enables the absorption of glucose found in the blood from the cells. Therefore, this leads to a state of hyperglycemia harmful to the health (occlusion of blood networks and more specifically of small capillaries, attack of internal organs including the kidneys, the heart...)

The lithuanian study of 2013 shows that the risk of type 2 diabetes is multiplied by 2,52 for a fast eater.

The pancreas is an organ that intervenes at the end of the digestion process. It appears that eating quickly and overtiring the pancreas participates to its deregulation.

Indeed, eating quickly accelerates the arrival of sugar in the blood whereas eating slowly stimulates naturally the secretion of the digestive hormone GLP1.

Yet this hormone contributes to filter the passing of sugar in the blood by slowing down the gastric emptying and by stimulating the secretions of insulin. Moreover, the GLP1 inhibits the production of glucagon, hormones that stimulate glycemia unlike the insulin.

The results suggest that a higher number of masticatory cycles before swallowing may provide beneficial effects on satiety and facilitate glucose absorption.		21 healthy males
2015	Journal of the Academy of Nutrition and Dietetic Jun;114(6):926-31. doi: 10.1016/j.jand.2013.08.020. Epub 2013 Nov 9.	Zhu Y, Hollis JH.

The present study suggests that eating rice with different feeding tools has different chewing times and amount of food taken per mouthful and then alters the Glycemic Index of the rice.		11 healthy volunteers
2015	Physiology & Behavior Feb;139:505-10	Sun L Henry CJ.

ALT activity is positively associated with faster eating, but is dependent on BMI in middle aged, apparently healthy Japanese women.		900 apparently healthy women (30-56y)
2014	Nutrition. Jan;30(1):69-74	Mochizuki K, Goda T.

Fast eating rates are associated with obesity and other cardiometabolic risk factors (such as high glucose and low HLD□cholesterol levels).		8755 Korean adults
2013	Nutrion Metabolism Cardiovascular Diseases: NMCD. Jul;23(7):635-41	Lee KS, Cho KH.

Higher masticatory performance and slow eating prevent the occurrence of diabetes.		6927 citizens of Nagahama City aged 40-74
2013	PLoS One Jun 5;8(6):e64113	Yamazaki T, Nagahama Study Collaboration Group.

More than two□fold increased risk of type 2 diabetes was determined for subjects eating faster (OR = 2.52) vs. subjects eating slower. *Illustration : According to this odds ratio, if in a control group of 100 slow eaters, 12 are diabetic, in an equivallent group of 100 people but fast eaters 25 of them will be diabetic. If in the control group 16 overeat frequently, they are 31 in the other group.*		702 people diagnosed with type 2 diabetes and non-diabetic
2013	Clinical Nutrition (Edinburgh Scotland) Apr;32(2):232-5	Radzevičienė L, Ostrauskas R.

Slow feeding leads to higher concentrations of GLP1 in obes adolescents. Plasma PYY concentrations increased both in obese adolescents and in adults, irrespective of the eating rate, but slowfeeding was more effective in stimulating PYY release in obese adolescents than in adults.		18 Obese adolescents and adults
2013	European Journal of Endocrinololy Feb20;168(3):429-36	Rigamonti AE, Sartorio A.

Blood pressure and lipid levels also tended to increase in association with eating rate. HbA(1c) (glucose test considering the average level over 3monthes) rose significantly as eating rate increased, whereas fasting plasma glucose did not increase significantly.		7275 individuals aged ≥40 years
2013	Diabetologia. Jan;56(1):70-7	Ohkuma T, Kitazono T.

Eating speed was associated with the incidence of diabetes. Eating slowly could be an acceptable lifestyle intervention for the prevention of diabetes mellitus.		2050 male
2012	Metabolism: clinical and experimental Nov;61(11):1566-71	Sakurai M, Nakagawa H.

Chewing more resulted in lower energy intake and postprandial ghrelin concentration and higher postprandial GLP 1 and cholecystokinin concentrations in both lean and obese subjects.		30 lean and obese young men
2011	American Journal of Clinical Nutrition Sep;94(3):162-70	Li J, Wang S.

Eating at a physiologically moderate pace leads to a more pronounced anorexigenic gut peptide response than eating very fast. (Peptide YY secretion was higher after the 30□min meal than after the 5-min meal)		17 healthy adult male
2010	Journal of Clinical Endocrinolology and Metabolism Jan;95(1):333-7	Kokkinos A, Katsilambros N.

The group with metabolic syndrome (obesity, high blood pressure, low high□density lipoprotein cholesterol level, high triglyceride level, and high fasting blood glucose level) was more likely to eat quickly (OR 2.23 for fast vs slow) and to overeat frequently (OR 2.37 for more than 4 times a week vs less than once a week. Illustration : According to this odds ratio, if in a control group of 100 healthy people, 16 are fast eaters, in an equivallent group of 100 people but with metaboclic syndrom 30 will be fast eater. If in the control group 16 overeat frequently, they are 31 of them in the other group.		7081 men aged ≥30
2009	Journal of the American dietetic Association Apr;109(4):633-40	Shin A, Kim J.

Presentation of the studies

Color of the section

Color of the related topic the study treats

Topic of the section

Team Nationality	Main results of the study *Potential illustration*		Cohort number Cohort specification
	Years	Publication references	Author(s)

Color by section :

- Satiety
- Food Intake
- Obesity
- Metabolic Risks
- Diabetes
- GERD
- Food quality
- Chewing
- Portion Size
- Mindful eating
- Gastric surgery
- Scientific Method

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