

LUTEIN

and Tritordeum

tritordeum
VIVAGRAN



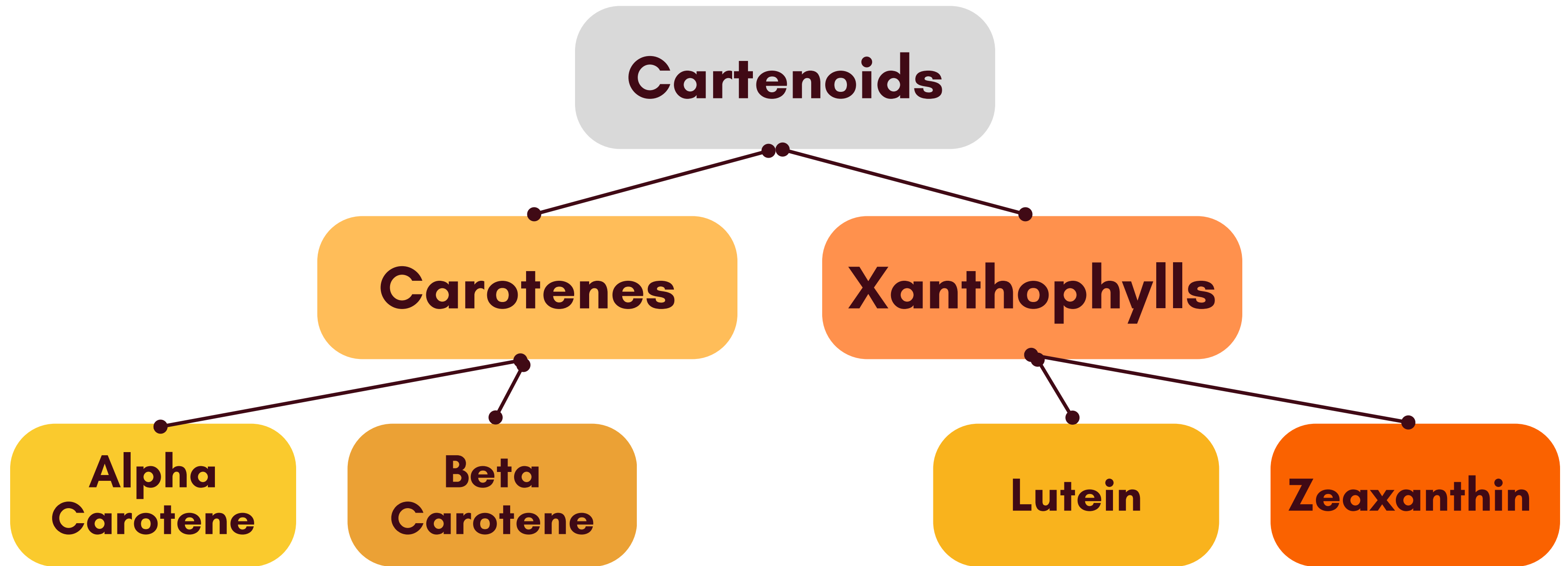
Introduction

Lutein is a carotenoid, a type of pigment found in plants that gives them their yellow to red color.

Lutein is essential for maintaining good eye health and protecting against age-related macular degeneration (AMD). It also functions as an antioxidant, neutralizing free radicals that can cause cellular damage.

Lutein is abundant in certain cereals, in green leafy vegetables like spinach and kale, as well as in yellow and orange fruits and vegetables. It is also found in egg yolks.

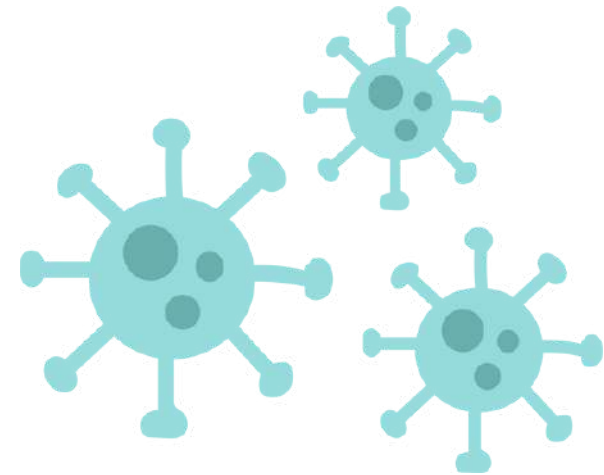
Biology



Lutein is a Xanthophyll.

Health Benefits

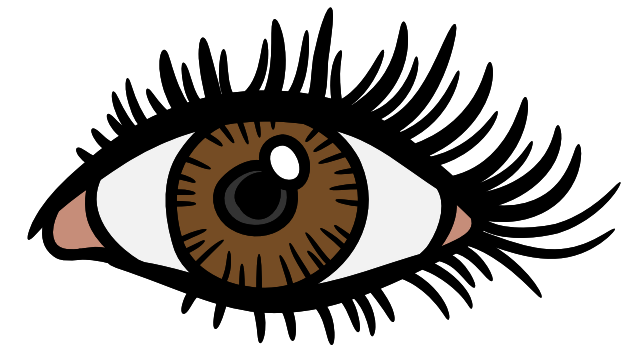
Lutein is an Antioxidant



Protects body cells
from oxidative
stress



Supports cognitive
development and
functioning



Improves visual
acuity

Oxidative Stress

Lutein is Anti-Inflammatory

Lutein has anti-inflammatory and anti-oxidative properties that are important for tissues of the body. Cell membranes and omega-3 fatty acids like DHA* are particularly susceptible to oxidative damage from free radicals.

**DHA is a type of polyunsaturated omega-3 fatty acid or in short, PUFA.*



Health Benefits

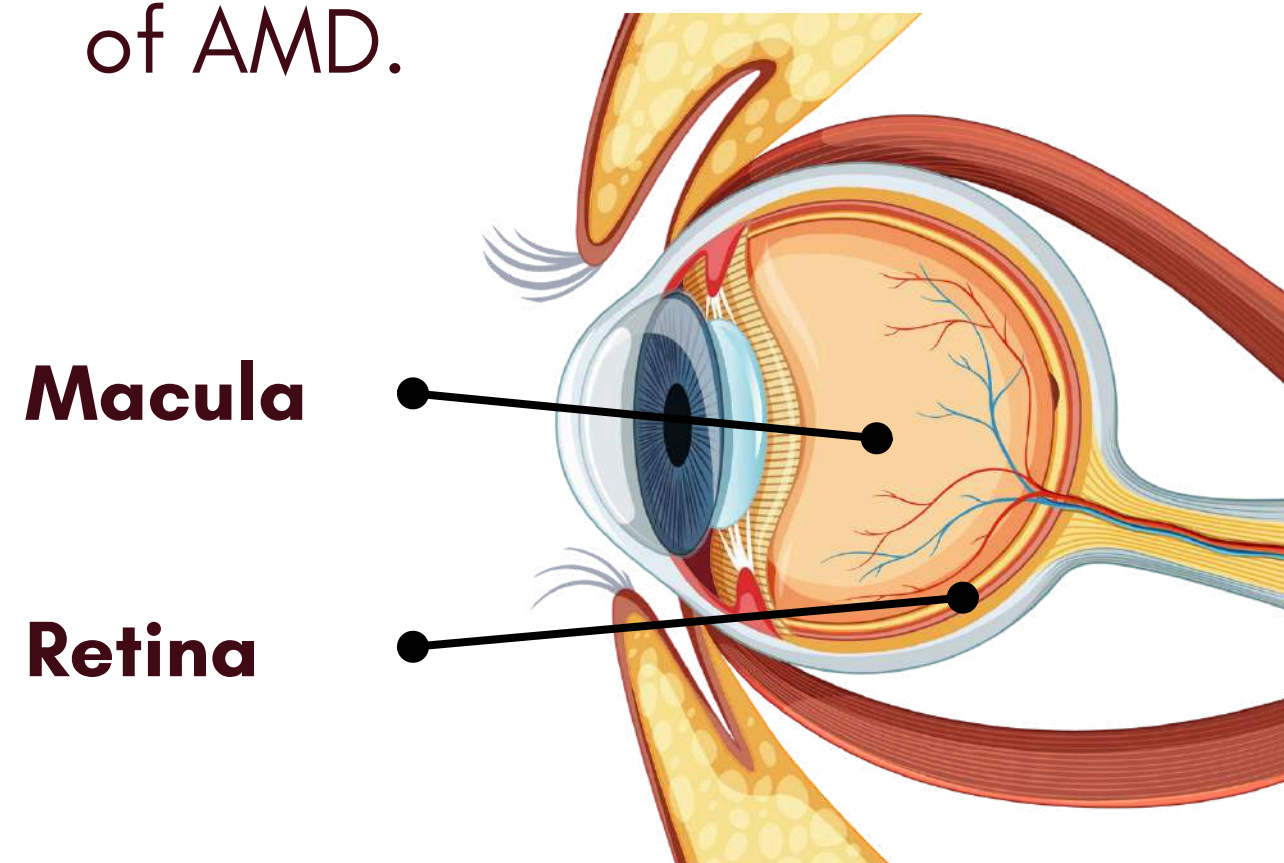
Lutein is an Anti-Oxidant

Lutein helps protect cells from oxidative stress by scavenging free radicals. This antioxidant action is crucial in reducing the risk of chronic diseases such as heart disease and cancer.

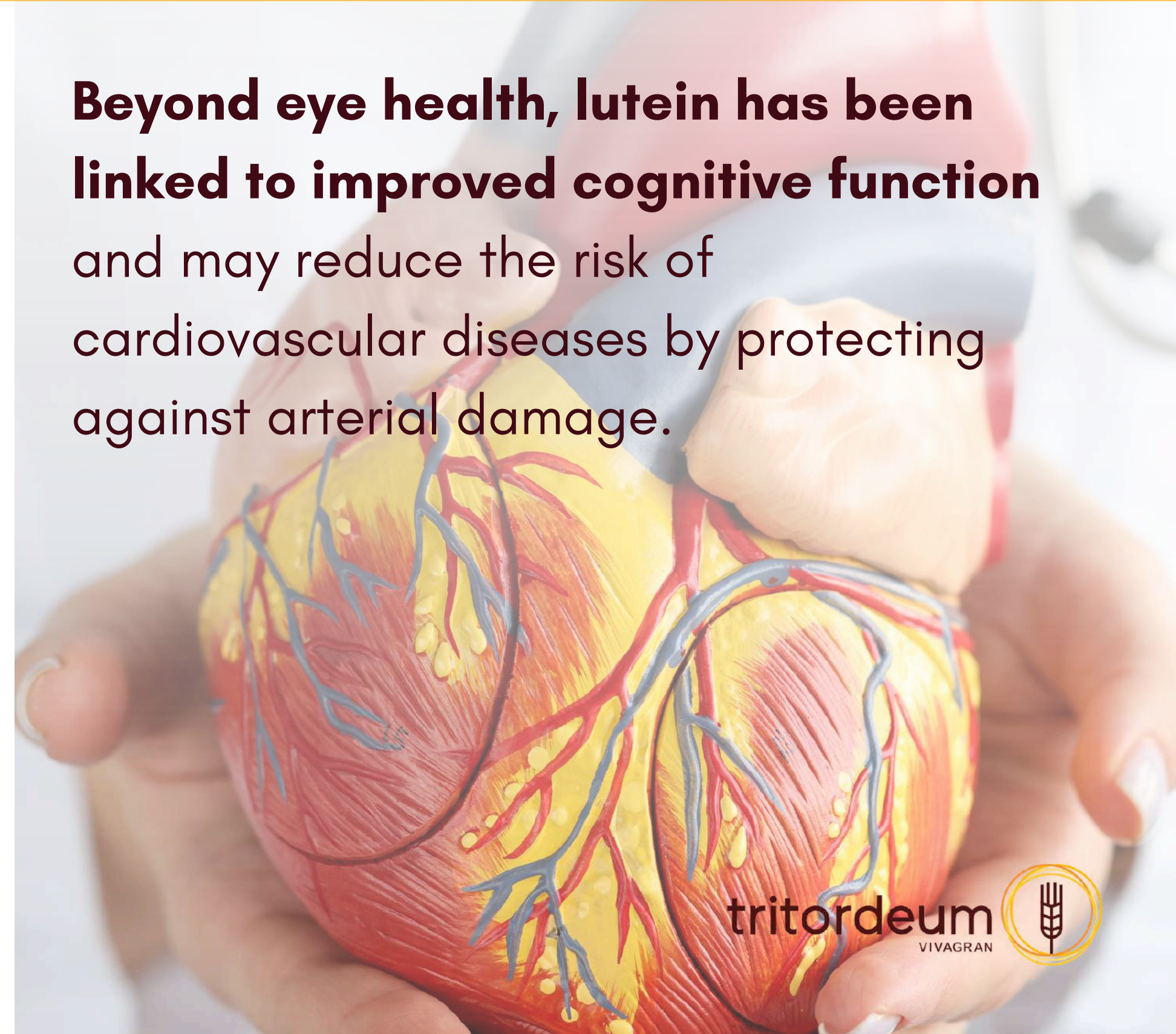


Health Benefits

Lutein accumulates in the retina, particularly in the macula, where it acts as a natural filter of blue light. This helps to protect the eyes from light-induced damage and reduces the risk of AMD.



Beyond eye health, lutein has been linked to improved cognitive function and may reduce the risk of cardiovascular diseases by protecting against arterial damage.

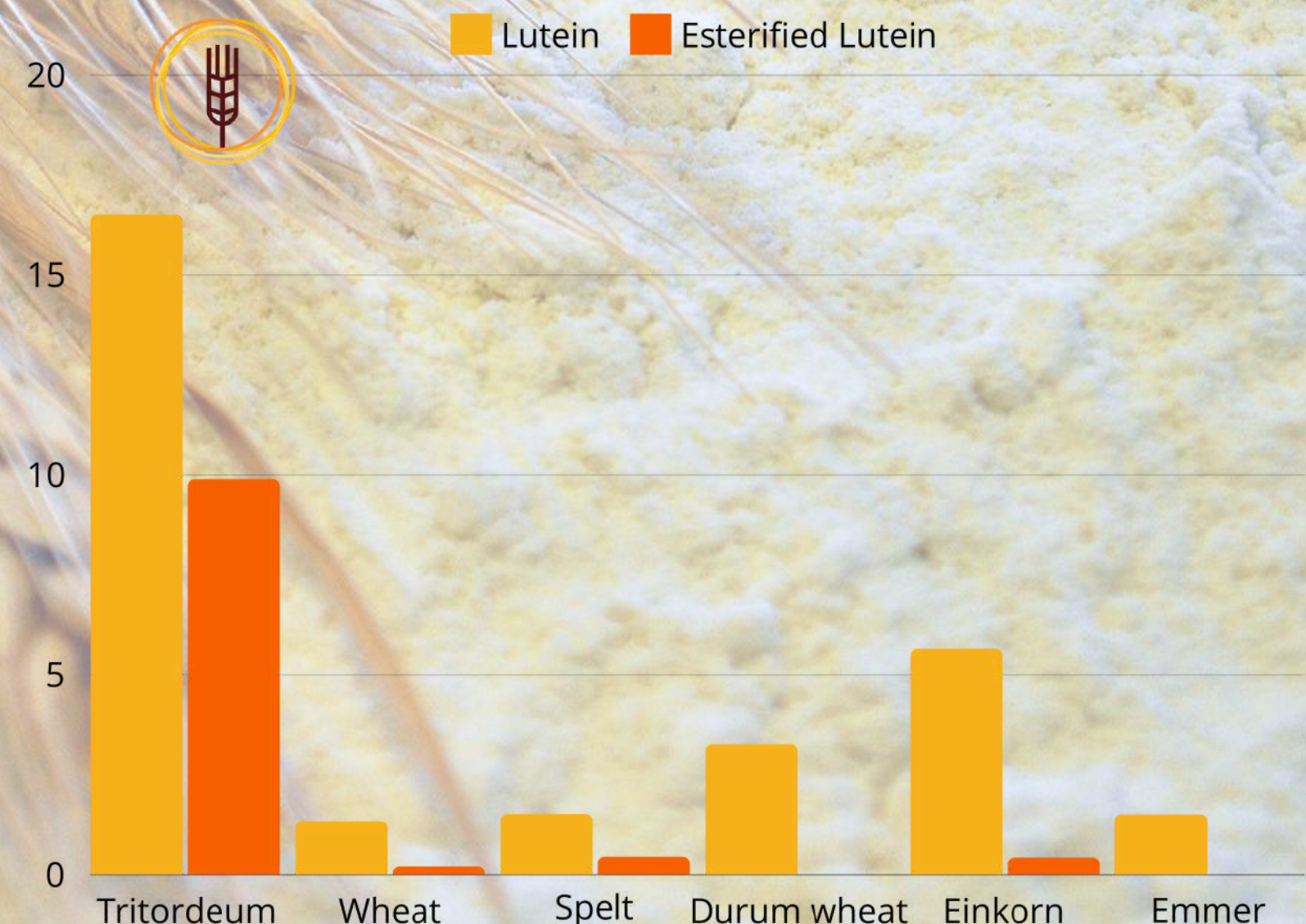


Cereals as a Source of Lutein

Lutein Content in Common Cereals: While cereals are not the richest sources of lutein, certain grains like Tritordeum contain notable amounts.

Lutein content in cereals can vary based on the species, variety, and growing conditions, including soil quality and exposure to sunlight.

Graph: Lutein content in grain (mg/g)



Lutein Bioavailability

Factors Affecting Lutein Absorption from Cereal Sources: Lutein absorption can be influenced by dietary fat, the presence of other carotenoids, and food matrix effects.

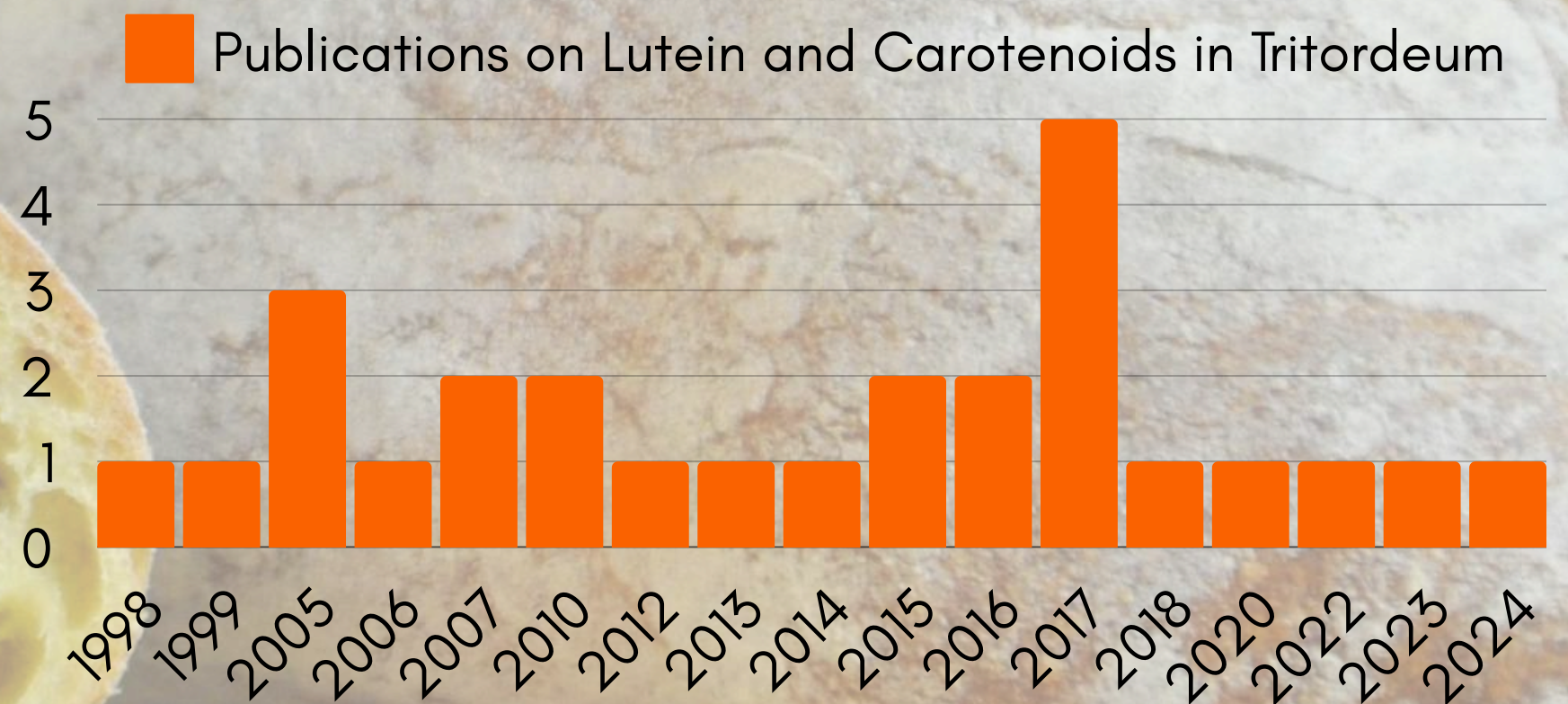
Combining lutein-rich cereals with healthy fats, such as olive oil can enhance its absorption. Processing techniques, like milling and cooking, can also affect lutein bioavailability.

Researchers are exploring ways to fortify cereals with lutein or increase its natural content through breeding and bioengineering. This research aims to make lutein more accessible in everyday diets.

Applications & Research

Tritordeum in Functional Foods: Tritordeum's high lutein content makes it an excellent candidate for functional foods aimed at improving eye health and providing antioxidant benefits.

The lutein content in Tritordeum is being widely studied. 27 publications can be found in the literature in relation to Tritordeum, and many more studies exist on lutein as a Health-benefiting nutrient.



Lutein in Tritordeum Bread

Lutein and Carotenoids Contents in Wheat and Tritordeum Breads:

Graph: Content in micro grams/100gr of breads (dry matter)



Daily Intake

Intake of lutein.

According to available clinical studies Lutein exerts the described benefits if consumed 3-5 mg/day.

Lutein is safe up to 20 mg/day.

source: Ranard KM et al. Eur J Nutr. 2017 Dec;56(Suppl 3):37-42.



Daily Intake

Intake of lutein with Tritordeum bread.

Tritordeum bread* contains 0,36 mg of lutein per 100g. While wheat bread contains 0,055 mg.

Therefore 3 slices of Tritordeum bread (120gr) can provide

15% of the required lutein daily intake of lutein

Lutein for infants

Tritordeum offers, for the first time, a natural source of lutein for cereal porridges,

with levels up to 13 times higher than wheat and a high level of esterification that provides greater stability and bioavailability.

Lutein in children's formulas is safe and beneficial for infant brain development and growth, according to Abbott Research.



Discover more at: www.tritordeum.com