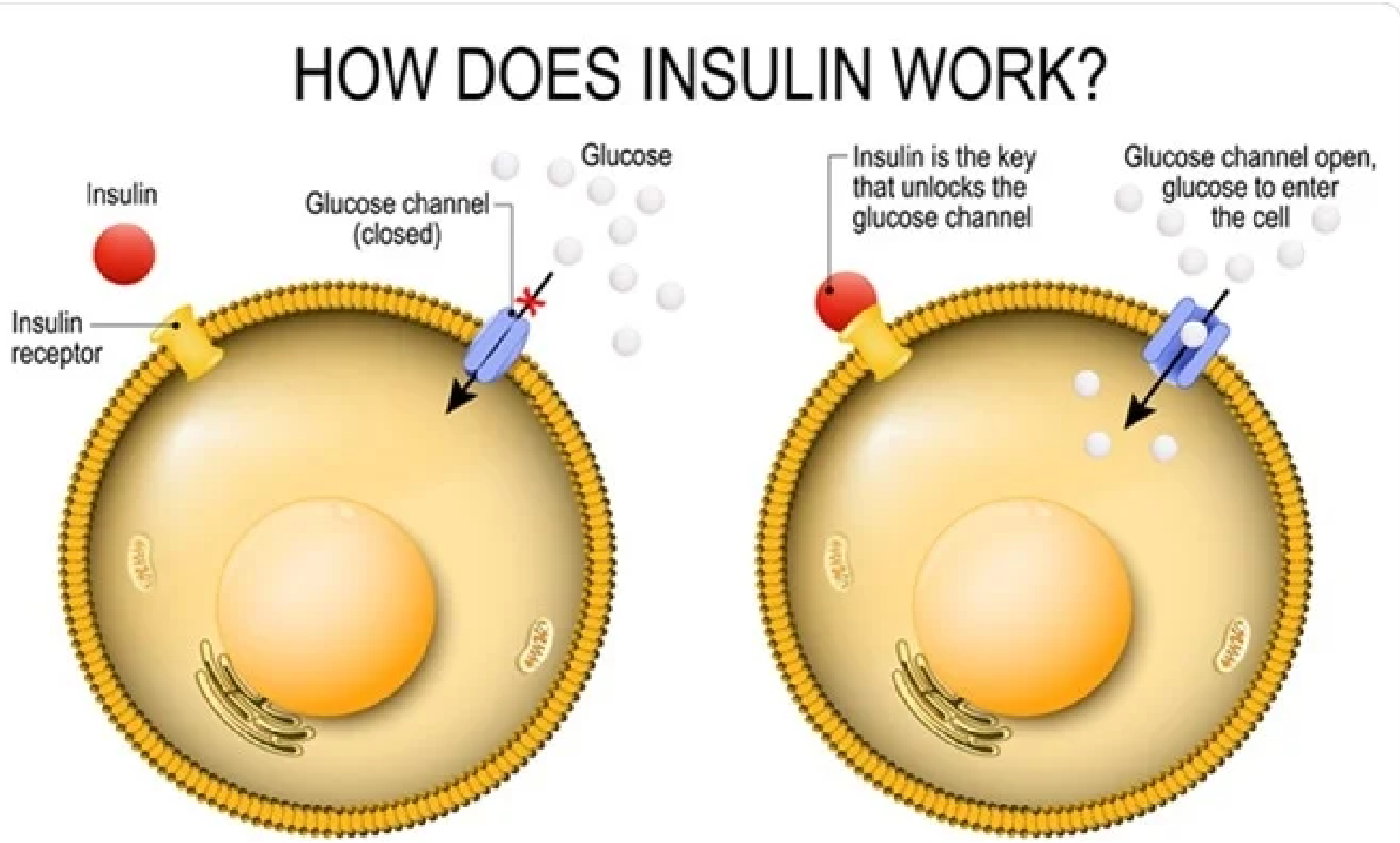
Insulin

A hormone produced in the pancreas in response to rising blood sugar, it also plays a role in protein synthesis and amino acid transfer in to cells

Insulin



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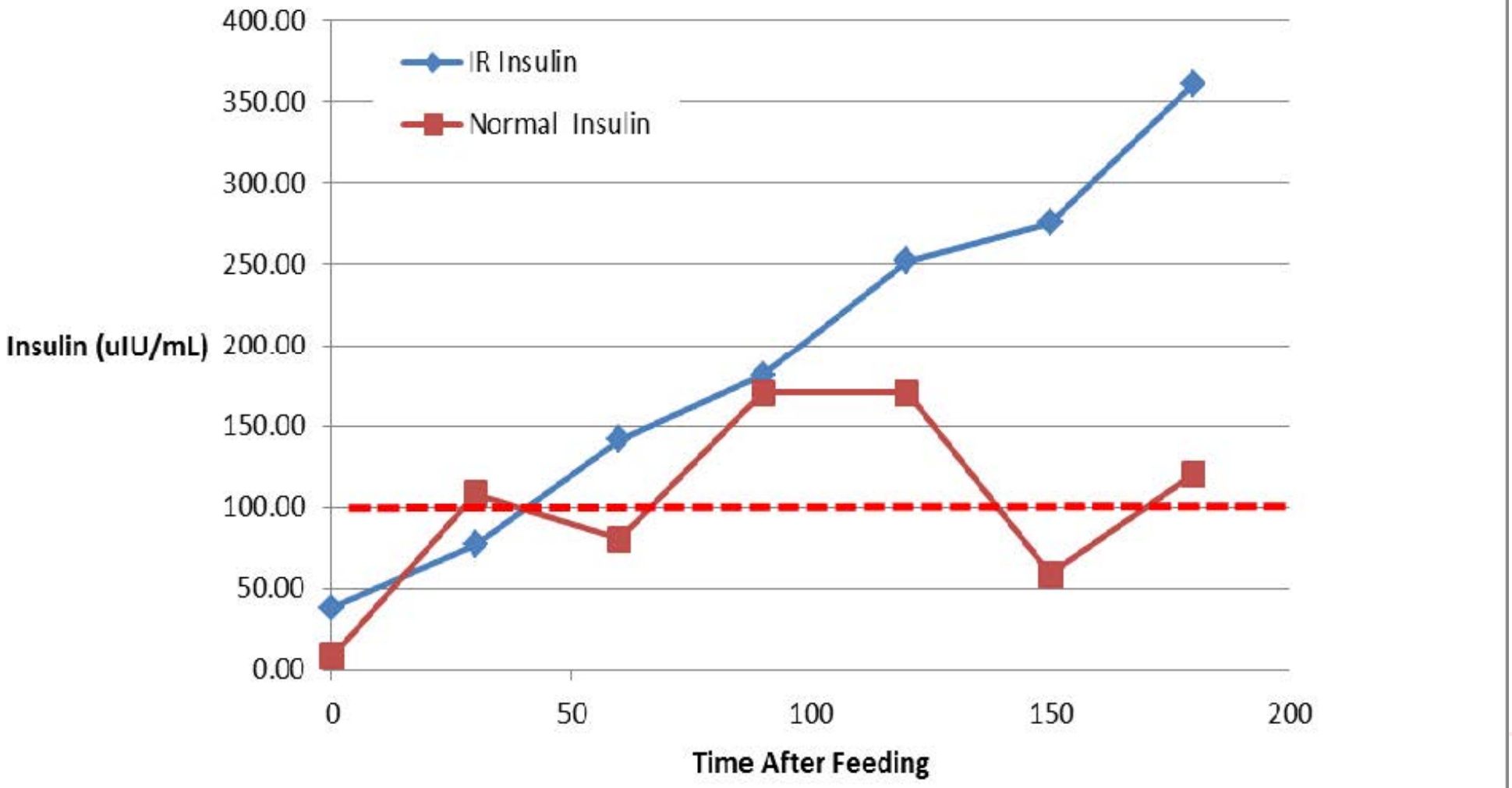
Insulin Resistance

IR occurs in response to constant elevations in blood glucose levels associated with poor dietary choices and adrenaline response. Be sure to watch the clip explaining this for a better understanding of IR and its relevance to your health.

Testing

Testing for IR is usually serum insulin levels, this will be the first indication of poor blood sugar control. Usually you will have HbA1c tested and fasting blood glucose, the prior is glycated haemoglobin or in plain words sugar stuck on red blood cells, the latter is how much glucose remain in blood circulation after a period of fasting - usually 8+hours. Be sure to listen to the clip on this fro a deeper understanding.

Normal vs IR



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Effects of hormones on glucose metabolism

Tissue and hormone	Gluconeogenesis	Glycogenolysis	Glycolysis	Glucose uptake
Liver				
Adrenaline	Increased	Increased	Decreased	
Cortisol	Increased			Decreased
Glucagon	Increased	Increased		
Growth hormone		Increased	Increased	Decreased
Muscle				
Adrenaline		Increased	Increased	
Cortisol				Decreased
Growth hormone				
Short term			Increased	
Long term			Decreased	
Adipose				
Cortisol			Decreased	

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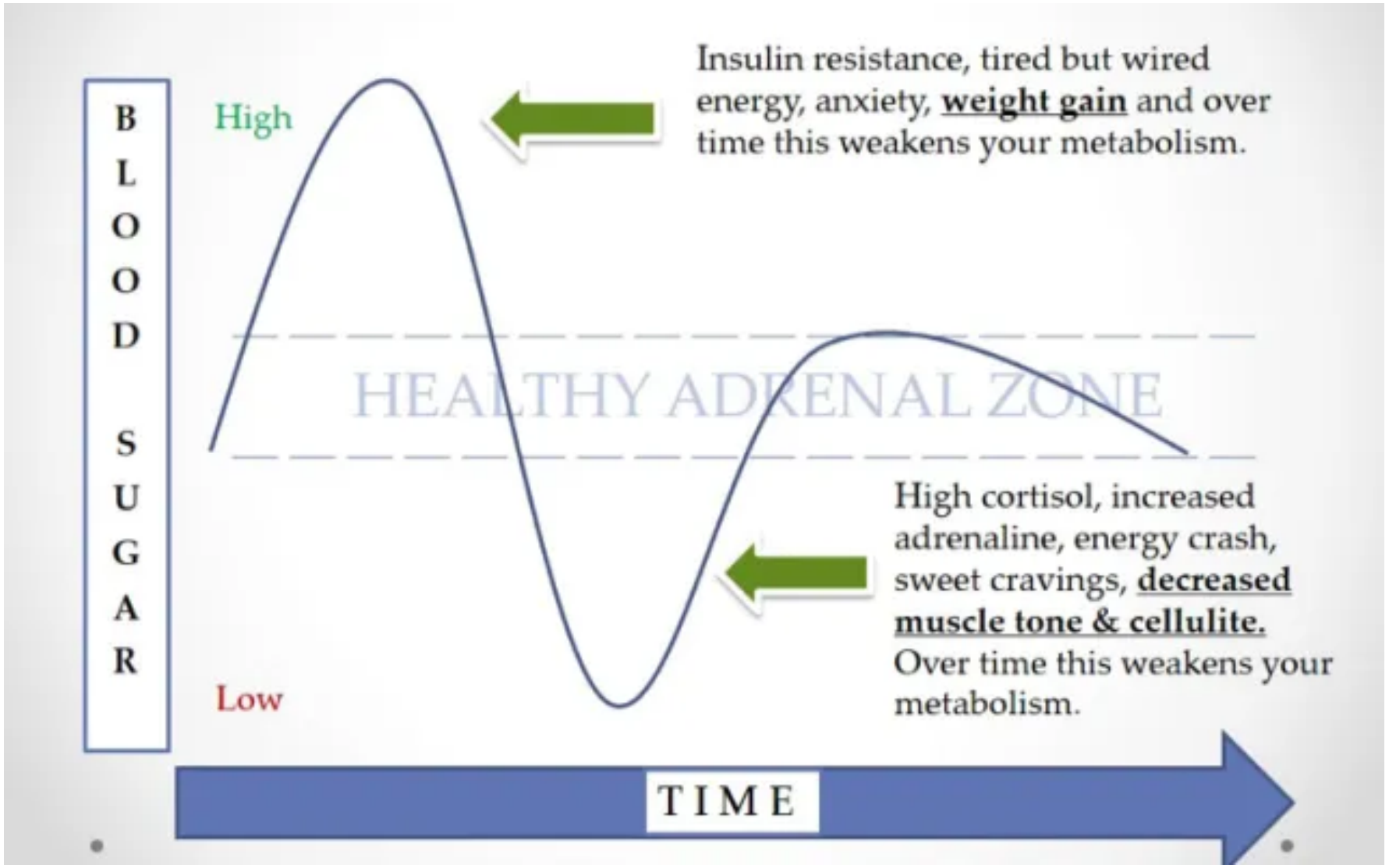
Insulin, Adrenaline and Cortisol



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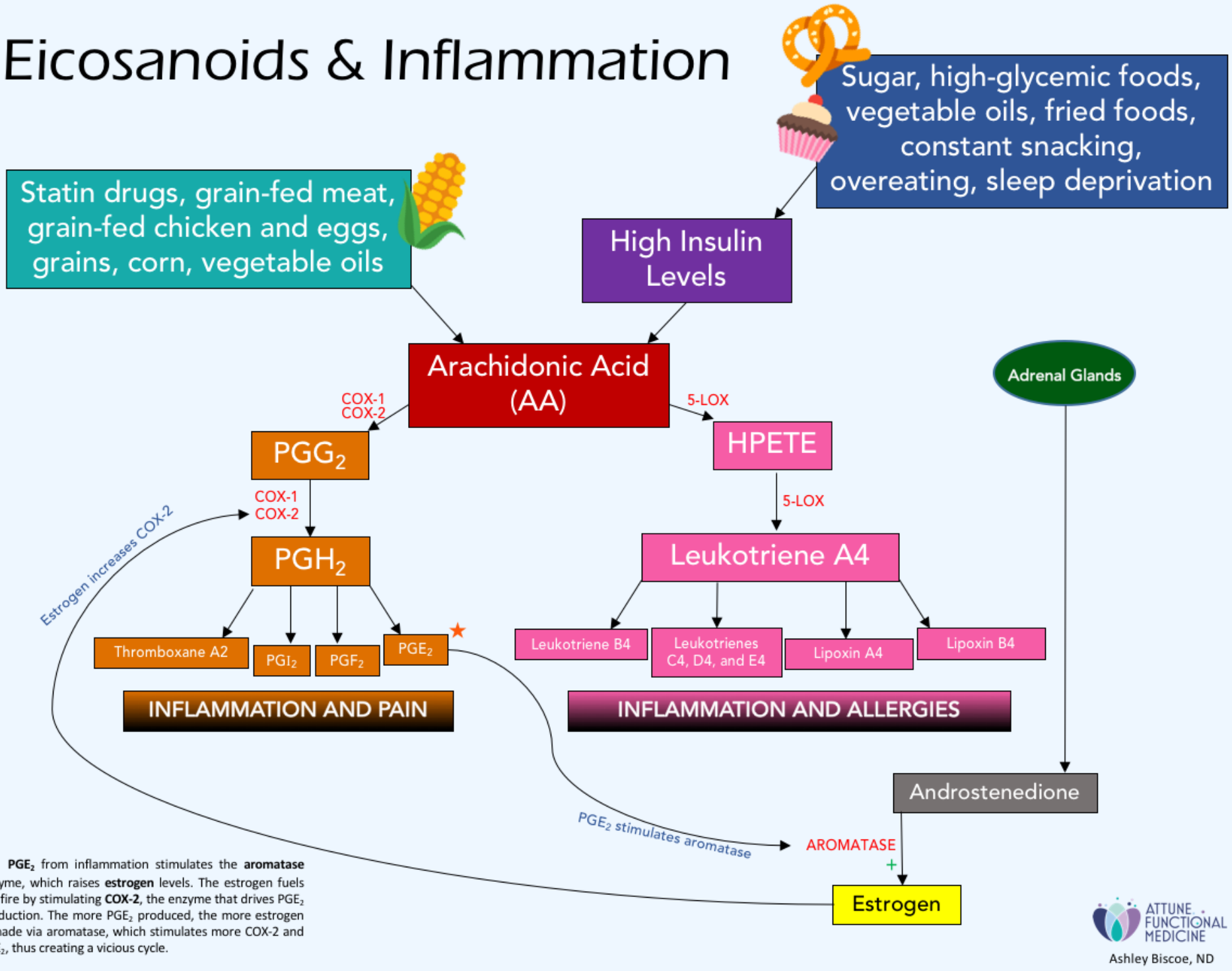
Eicosanoids & Inflammation



★ **PGE_2** from inflammation stimulates the **aromatase** enzyme, which raises **estrogen** levels. The estrogen fuels the fire by stimulating **COX-2**, the enzyme that drives PGE_2 production. The more PGE_2 produced, the more estrogen is made via aromatase, which stimulates more COX-2 and PGE_2, thus creating a vicious cycle.

ATTUNE FUNCTIONAL MEDICINE

Ashley Biscoe, ND

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Insulin's many roles

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