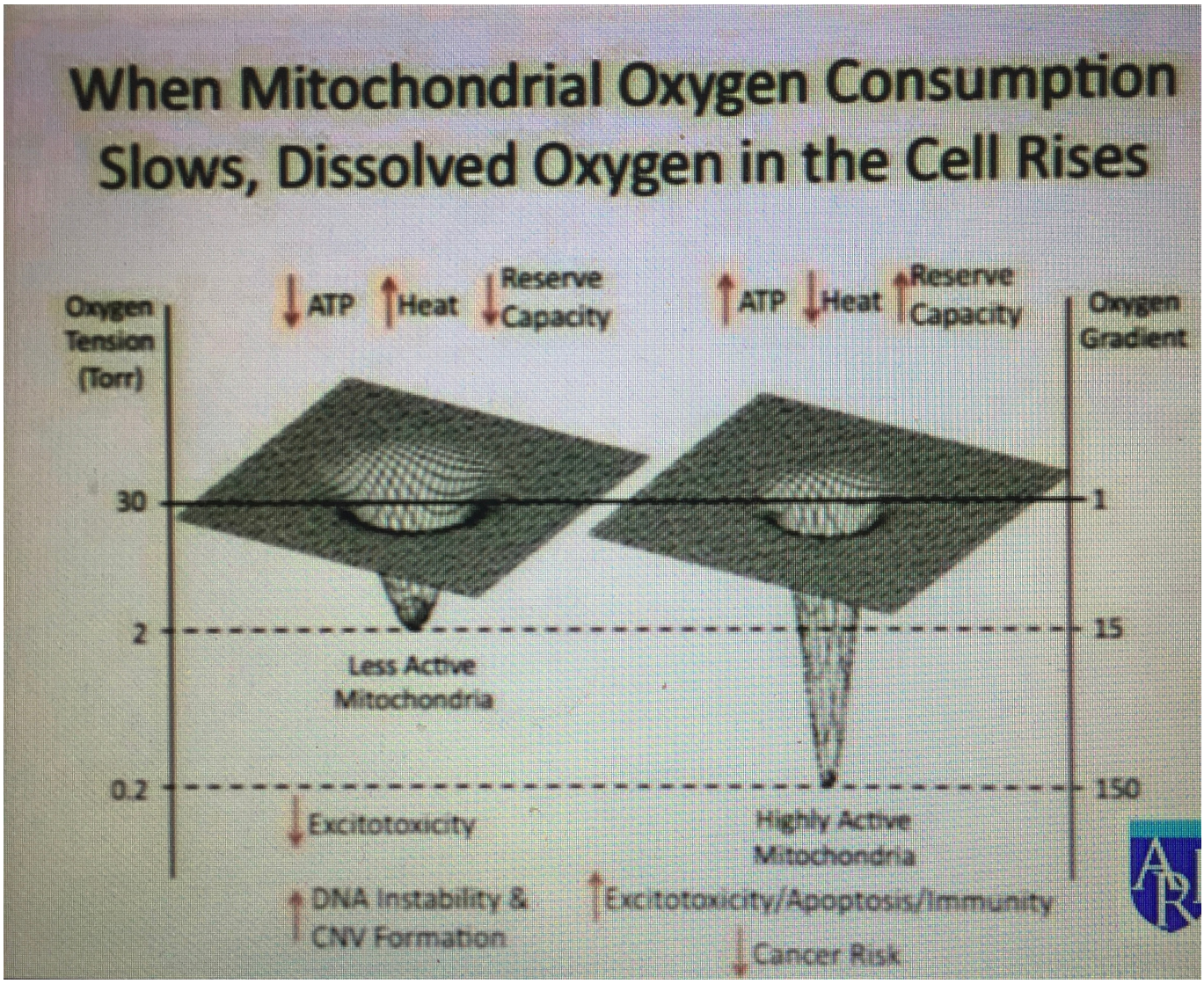
HYPOXIA #1: WHY IS HYPOXIA AND LOW NAD+ LINKED TO AGING AND DISEASE?

I covered this in Levee 25 of the Quilt long ago and now this series will visit this in depth:

Hypoxia/pseudohypoxia. Hypoxia is a cellular state that disrupts normal oxygen supply to the tissue (mitochondria), causing cellular dysfunction. Examples of t 25.his are altitude sickness at high elevations and clots in a blocked artery in an organ causing an organ to fail and die. Apoptosis and autophagy allow cells to adapt over their lifespan to many situations. Hypoxia is directly toxic to mitochondrial energy production. In humans, when oxygen is in short supply we can shift to anaerobic energy production, but it is not as efficient as mitochondrial energy production. Athletes with proper training can perform well in anaerobic conditions but it does appear that they pay a steep price for this adaptation by depleting their stem cell supply. The gateway in mitochondria for hypoxia is pseudohypoxia by blockade of pyruvate which sits atop the TCA cycle inside the matrix. The gatekeeper of the creation of Acetyl-CoA from pyruvate is ***thiamine.*** It is the major controller of substate movements in the matrix. As it drops we lose control of UCP-2 and this alters the matrix concentration of hydrogen isotopes.



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