

## Behind "Eat for your Blood Type" Diets

Back in 1996, the "Eat Right for Your Type" or "The Blood Type Diet" (<http://www.4yourtype.com/> and <http://www.dadamo.com/>) was introduced by Dr. Peter J. D'Adamo along with a whole slew of products--foods, supplements, blood tests, and more--claiming that weight loss (and fat loss) could now be targeted and individualized based on one's blood type profile (Abdul-Karim, 2009; Wang, García-Bailo, Nielsen, & El-Sohemy, 2014).

Blood is classified as O, A, B, or AB according to the presence of antigen (markers) on the blood cell (Cusack, De Buck, Compennolle, & Vandekerckhove, 2013). Another marker called the Rh factor (negative for no-Rh factor, positive for Rh factor) also helps to classify blood. Certain blood types have been shown to be more susceptible to certain diseases (Cusack et al., 2013; Wang et al., 2014). However, blood type diets claim a definitive link between blood type group, evolutionary/ancestral eating, and optimum diet.

D'Adamo's "blood type" diet claimed that type O blood group (the ancestral blood group of the hunter-gatherer) was suited for high animal protein diets; type A blood group (from agrarians) would optimally be vegetarians; type B blood group (ancestral nomads) should consume a high percentage of dairy products; and type AB blood group should maintain a diet combination similar to both type A and type B (Abdul-Karim, 2009; Wang et al., 2014).

Wang et al. (2014) studied 1455 subjects' dietary intake through a questionnaire to observe how closely their nutrition matched a diet-group in the blood type diet. Measurements, blood and lipid panels were also conducted on the subjects (Wang et al., 2014). Wang et al. (2014) noted that while certain "blood type diet" plans (e.g. diet predominantly vegetables) tended to yield favorable cardiometabolic results (as shown in lab testing), there was no clear or definitive link to the subjects' actual blood type. Wang et al. (2014) found no significant benefits matching the subjects' blood type to a "blood type diet", and potentially there could actually be adverse effects in trying to do so.

Cusack et al. (2013) conducted a systematic review to answer the population, intervention, comparison, and outcome (PICO) question: "In humans grouped according to blood type (population), does adherence to a specific diet (intervention) improve health and/or decrease risk of disease (outcome) compared with nonadherence to the prescribed diet (comparison)?" (p. 100). Out of 1415 identified articles, only one article met the criteria for inclusion for the intervention (Cusack et al., 2013). There was an extreme paucity of information or evidence to support that ABO blood types could be positively correlated to ABO blood type diets (Cusack et al., 2013).

The rationale for blood type diets arises from lectins which are a kind of protein that can bind (sugar binding) to cell membranes (Abdul-Karim, 2009; Andrews, n.d.). Lectins (abundant in plants, raw legumes, grains, and some dairy) are often destroyed in the cooking process, by sprouting, or fermenting (Abdul-Karim, 2009; Andrews, n.d.). Some lectins (also known as phytohaemagglutinin) make it to the bloodstream where they elicit an immune response (creation of antibodies) because they resemble (by way of similar structure) blood-type antigens or markers (Abdul-Karim, 2009; Andrews, n.d.). Different people respond differently to different

lectins (Andrews, n.d.). While some immunological responses are beneficial, most responses are linked to nausea, diarrhea, vomiting, and the general characteristics of "food poisoning" which may actually be "lectin poisoning" (Andrews, n.d.). Blood type diets claim a direct link between the ABO blood types and the immunological response to lectins.

I remember when variations of "eat for your blood type" came out and hit the consumer through media, especially late night infomercials. My knee-jerk reaction was "no way", but reliable resources were extremely rare to examine the blood type diet claims. Even today, resources are somewhat scarce on this topic. Personally, I am careful with perspectives that attempt generalizations based on blood or genetic profiling. This "grey" area is sensitive when I think about the ethical and historical issues. The blood type diets have always been in the back of my mind, and I am glad to finally understand (perhaps not as fully as I would like) what is at the root of the blood type diet claims. Nowadays, food has become such a scientific project especially with the debates on genetically altered food. My understanding of antibodies and antigens is a bit better when speaking of viruses. Viruses can mutate and change. Thus it makes sense that our bodies must adapt to fight them (agglutination, opsonization by complement proteins, neutralization of the antigen via lysis). The immune response seems very specific to me. So it seems a bit lofty to generalize a response based on blood type without considering specific environmental, exposure, and individual factors. That is my reasoning why blood type diets do not make sense.

## References

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