6 Things You Did not Know About Your Blood Type

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For something so intrinsically a part of us, it seems there's plenty we're in the dark about when it comes to our blood type. Indeed, according to various surveys, anywhere from 35 to 50 percent of people in the Western world just plain don't know what their type even is.

That's why we here at Medical Daily have decided to pull back the curtain and lay down some interesting factoids about blood types and their continuing, if sometimes overexaggerated, importance to our lasting health.

TWO OF MANY

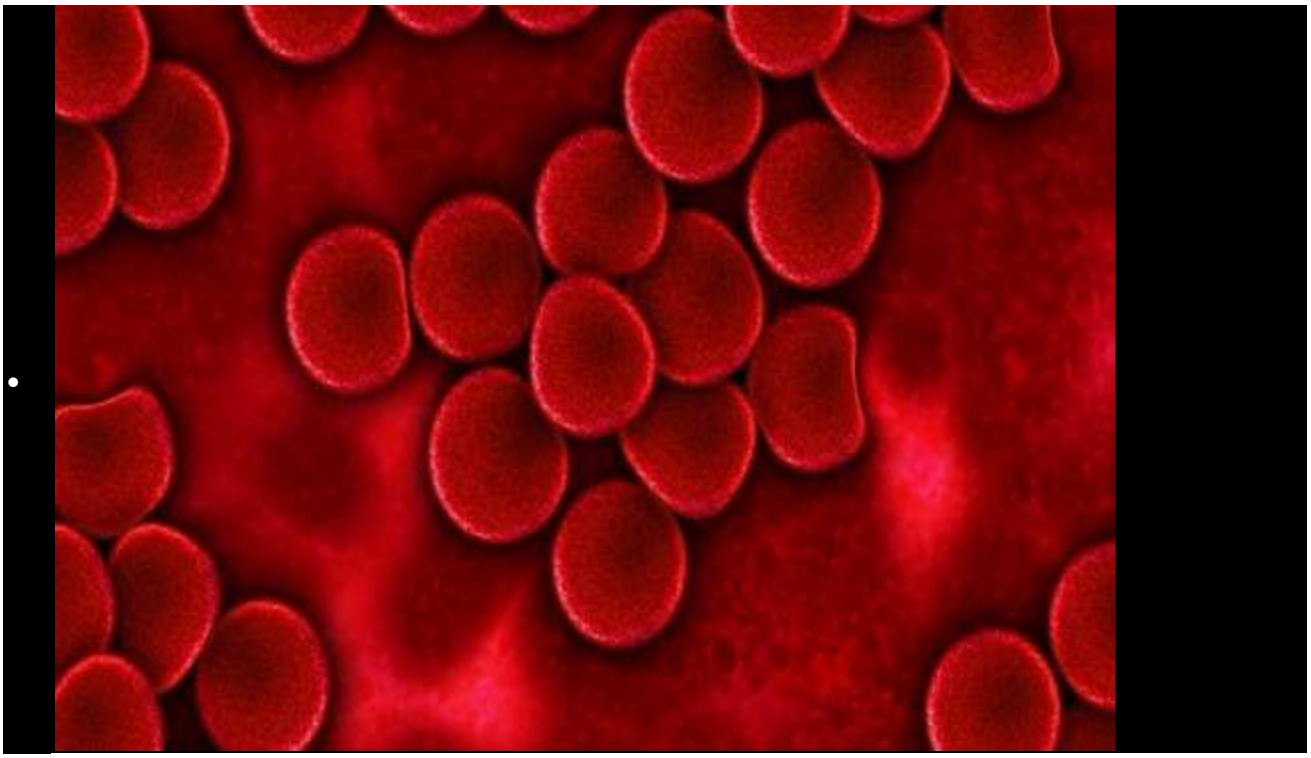
When you're trying to remember your blood type, you're likely grasping for two things: is it A, B, AB, or O? And is it positive or negative?

But your precise blood type is vastly more complex than that. Our red blood cells are constantly covered by different kinds of antigens — as many as 600 known currently, though only around a quarter of these are commonly seen. These antigens, inherited from our parents, can be broken down into 35 broad blood groups, with the most relevant being the ABO group and the Rhesus group. And of the 61 antigens in the Rhesus group, the most essential is the D antigen.

When it comes time for a blood transplant, our body can usually only accept donated blood cells compatible with the antigens from these two groups. That's because people with the A, B and O types produce antibodies that target the A or B antigens not native to their body. In other words, people with an A blood type produce antibodies for B and vice versa. People with the O type lack both A and B antigens and therefore produce antibodies for both, while people with the AB type don't produce antibodies for either.

Similarly, people without the D antigen typically can't use blood positive for it, while people who have a positive D type can use D- or D+ blood.

Thus, O- people are considered universal donors, while AB+ people can receive blood from anyone else. Interestingly enough, the opposite is true when we only need to transplant the liquid component of blood, called plasma, into someone else's body.



THE RAREST OF THEM ALL

You may have heard that the AB type is the rarest around, and that's true when only looking at the eight different combinations of A, B, O, and D+ or D-. The percentages shift a bit depending on the ethnic group you're looking at, but according to the Stanford School of Medicine, 0.6 percent of the general population have the AB- type.

As mentioned before, though, there are lots of antigens our blood cells are capable of sporting. And while we largely share many common combinations, there are people who possess extremely rare ones. Case in point, a man only identified as Thomas who was profiled by *Mosaic* in 2014. His blood is special not for the antigens he possesses, but the ones he doesn't — namely all the antigens in the Rhesus group. That fact makes him one of 40 known people to have a Rh null type in the world, and one of six known donors.

But while his blood allows him to be an universal donor for anyone else with a rare RH type, it also means that, should he ever need donated blood, he would only be able to use Rh null blood, either from his own stored supply or from the other five members of his exclusive club.

AN INCOMPATIBILITY PROBLEM

Speaking of the RH type, the compatibility problem outlined in the first slide is more complicated when it comes to antigens.

Unlike the ABO group, people who are negative for the D or other RH antigens aren't automatically unable to tolerate blood containing them. It's only after exposure to RH+ blood that their body begins producing antibodies to the antigens, and that doesn't always happen. That means a person with RH- blood could theoretically receive RH+ blood without having it rejected by their body, at least the first time around. Because of how potentially dangerous that scenario could be, though, that's almost never considered an option.

A much more common situation is when a RH- mother gives birth to a child with RH+ blood. If it's the first time, there's no trouble at all, but if it's the second time, or the mother had somehow received donated RH+ blood before, there's a chance the mother has developed antibodies that can pass through the placenta and attack the fetus' blood cells, resulting in a condition called hemolytic disease of the newborn. This can also happen with babies who are incompatible with their mother's ABO type, but it's usually very mild and much rarer.

Thankfully, RH incompatibility can usually be prevented with drugs or unique antibodies that knock out the mother's ability to ever form RH antibodies in the first place.

THE PERSONALITY MYTH

At the beginning of this piece I mentioned that a surprisingly good number of people are unaware of their blood type. But that's really only true in Europe and the United States. In Japan, blood type is as crucial to your identity as your hair color or ability to hum show tunes gracefully.

The existence of the ABO blood group was first uncovered at the turn of the 20th century. Soon after, in 1927, a Tokyo professor named Takeji Furukawa published a paper that speculated that our blood types could also predict our personality traits. Though it soon faded from the public view, it was revived with much greater fanfare by author and journalist Masahiko Nomi in the 1970s. And to this day, Japanese celebs and citizens alike turn to their blood types in order to gain insight into their innermost workings and to figure out whether that special guy or gal is truly compatible with them.

Though isolated support for such a link pops up now and then — even recently — the overwhelming majority of research places it firmly in the junk bin of science, right next to using the shape of our heads to figure out whether we're destined to be criminals.

THE DIET MYTH

Lest you mock Japan for their seemingly bizarre fascination, the crank science surrounding blood types isn't isolated to one corner of the world.

In 1996, an American author and naturopath by the name of Peter J. D'Adamo released the book Eat Right 4 Your Type. That started off an impressive — if poorly spelled — franchise of guides on how to tie every single health decision you make to your blood type. Taking things one step further, he even released a diet bookcatered to a person's "genotype," a particularly catchy and completely meaningless buzzword that apparently describes our genetic destiny.

In the original book and his revisions since, D'Adamo advocates for a personalized diet depending on a person's blood type, such that someone with type O blood should only eat a high-protein diet obtained mostly from meat, fish, and poultry, while someone with type A should do the opposite and avoid all meat.

Suffice to say, there's even less science backing up any of D'Adamo's claims than there is with the personality link, particularly when it comes to improving our health or preventing disease. Not that you would know that from listening to respected household names like Dr. Memhet Oz, mind you.

SOME HEALTH RISKS INCLUDED

Snark aside, it isn't fair to say that our blood type is completely meaningless to our overall health. Research has consistently shown that our ABO type can be a risk factor for certain diseases.

For reasons we're still not sure of, people who don't have type O blood generally have higher levels of the proteins responsible for controlling our bleeding, called clotting factors. While these proteins help us heal more quickly from a skinned knee, they also place us at greater risk of getting unnecessary clots in unwanted places, such as the deep veins of our legs. Sometimes the clots can even break off and travel elsewhere, a particularly dangerous condition called venous thromboembolism. And sure enough, people without type O blood are about twice as likely to develop it.

Other recent research has found a similar connection between blood types other than type O and cardiovascular disease as well as cancer. According to a 2015 review, nearly 6 percent of total deaths, including 9 percent of deaths caused by cardiovascular disease, could be chalked up to simply not having type O blood.

Though there's a lot of science left to be done in untangling the relationship between blood type and health, it's apparent that we haven't come close to understanding everything there is to know about the very essence of life.