



## Does Fungal Infection Cause Male Pattern Baldness and Heart Disease?

Quite the rabbit hole I've been down with my research. Does fungal infection cause male pattern baldness and heart disease? There's an iron link to fungal infection too.

This started when a reader told me that he had started donating blood after reading this site and [my book on iron](#).

He said that he had had seborrheic dermatitis of many years standing. (Click [here](#) if you want to see what that looks like.) It's basically something like really terrible dandruff, but can be on any part of the body. He had tried both anti-fungal medication and topical steroids, and nothing worked. Since it didn't bother him much, he quit worrying about it.

After his first blood donation, it started clearing up, and after his third donation, it completely disappeared.

What in the world? It turns out that [both dandruff and seborrheic dermatitis are linked to a fungal infection by the fungus \*Malassezia\*](#). So is [tinea versicolor](#), a skin infection; when I lived in Sierra Leone, virtually everyone had it to some degree.

In this report, we show that dandruff is mediated by *Malassezia* metabolites, specifically irritating free fatty acids released from sebaceous triglycerides.

Dandruff is caused by a fungal infection.

[All microorganisms that invade man and cause disease require iron](#). (Every

living thing requires iron.) [Withholding iron from microbes](#) is at the center of an evolutionary arms race. It stands to reason that donating blood can treat fungal infections of the skin by lowering skin iron levels. (Donating blood will also [make you look younger](#).)

[Shampoo that contains salicylate and ciclopirox effectively treats dandruff. Ciclopirox is an iron chelator](#) (attaches and removes iron). So is [salicylate](#). By attaching and removing iron, they deprive fungus of required growth material, it dies, and dandruff is treated.

Ketoconazole, an anti-fungal chemical that works by inhibiting fungal steroid synthesis, [also treats dandruff](#).

## Male pattern baldness

Male pattern baldness has been linked to fungal infection as well, and [the antifungal drug ketoconazole treats male pattern baldness just as well as minoxidil \(Rogaine\)](#).

Comparative data suggest that there may be a significant action of KCZ [ketoconazole] upon the course of androgenic alopecia and that *Malassezia* spp. may play a role in the inflammatory reaction.

If this holds true for many or all cases of male pattern baldness (androgenic alopecia), then our notions of why some men go bald (that it's due to testosterone metabolites) may be all wrong. Curiously, folklore has it that hats cause baldness – perhaps by giving fungus a warm, moist environment in which to grow?

Male pattern baldness is also associated with heart disease. [Severe baldness was associated with a 2.5 fold greater risk of death from heart disease](#). Huge increase.

If fungal infection in the skin causes both male pattern baldness and dandruff, then iron is implicated, because all invasive microorganisms must take iron from their hosts.

[High iron \(ferritin\) is also associated with heart disease](#). The mechanism usually postulated is increased oxidative stress of the walls of arteries; iron is a very reactive metal capable of damaging biological structures.

But another mechanism might be the stimulation of fungal growth. [“Occult fungal infection is the underlying pathogenic cause of atherogenesis”](#) (from the journal *Medical Hypotheses*):

Atherosclerosis is the underlying cause of coronary heart disease (CHD). Atherogenesis is supposed to result from response to injury and is considered an inflammatory condition. A variety of infectious agents have been investigated as the underlying risk factor for atherogenesis, however, none have been proved to be

causally linked. Also several interventions against these agents have not been proved to be of benefit in trials. The role of fungal infection, however, has not been explored in sufficient detail. **Baldness particularly male pattern baldness and coronary artery disease have been linked in several epidemiological studies. There is some evidence that this type of baldness could be due to fungal infection and this link is being established even though traditionally male pattern baldness was associated with androgen effect. Seborrheic dermatitis and Pityrosporum [Malassezia] infection have been causally linked and the benefit derived from antifungal shampoo in male pattern baldness, gives further credence to the link with fungal infection. Here it is being hypothesized that fungal infection is the underlying risk factor for both baldness and CHD. Several interventions, which have proved beneficial in CHD like statins and drug coated stents, also have antifungal effects, lending further credence to the present hypothesis.**

[Fungal elements have been detected atherosclerotic plaques](#) (27% of those examined). [Fungal DNA has also been found in plaques.](#)

[Male pattern baldness is also strongly linked to insulin resistance and metabolic syndrome.](#) The Japanese have both a lower prevalence of diabetes and obesity, and [male pattern baldness in Japan develops a decade later and less frequently than in the West.](#)

[Hemochromatosis, or hereditary iron overload, causes hair loss in the majority of cases,](#) though apparently mostly body hair.

## Summary

Admittedly that's a lot of information. Here's where we are:

1. Fungal infections of the skin cause dandruff and seborrheic dermatitis. Fungi, like all microorganisms, require iron to grow.
2. Blood donation as well as iron chelators lower iron in the skin, depriving fungi (*Malassezia*, in this case) of a required nutrient. They then die off. Dandruff and dermatitis cured.
3. Male pattern baldness may very well be caused by fungal infection, together with other factors, such as androgens and genetic susceptibility.
4. The common link between male pattern baldness and coronary heart disease might be fungal infection, in turn caused by too much free iron.
5. Baldness is associated with insulin resistance, and this in turn associates with coronary heart disease.

## Conclusion: What to do

- If you have male pattern baldness, anti-fungal shampoo may fight it. Blood donation or iron chelators might also.

- If you have male pattern baldness, you're at higher risk of heart disease. If [the fungal/iron connection](#) holds true, getting your ferritin (iron) lower could lower your risk. In fact, even if the fungal connection isn't solid, lowering your ferritin still lowers your risk.
- Male pattern baldness is strongly linked to metabolic syndrome, which if not taken care of, often ends in diabetes. Taking care of yourself with a low-carbohydrate diet and exercise treats metabolic syndrome. It might make your hair grow back too.

Male pattern baldness is usually discussed in terms of cosmetics only, and is thought to be caused by androgens in the skin. But it could be caused by fungi that feed on iron, and a sign that something deeper and unhealthy is going on.

**PS: Read my book, [Dumping Iron](#).**

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