At the University of Bristol, new research on the healing time of wounds has been performed. This new breakthrough shows that by suppressing a gene that turns on in wound cells, wounds heal faster and reduce scarring. This is extremely helpful in the medical field for those people who have large wounds, burns, organ tissue damage or surgery creating large wounds and scars.

To understand the research findings, it is necessary to understand what happens when a wound begins to heal. After the skin has been injured, a blood clot forms under it and the cells underneath the damaged area begin to repair it. This leads to scarring, which is not only common on the skin, but is seen in all tissues when they begin to repair. This includes organs, such as the liver, and can cause major issues, sometimes leading to organ failure. When the tissue is damaged, it elicits an inflammatory response by white blood cells to kill bacteria and microbes so that infection is eliminated. The white blood cells start the production of collagen layers, which help heal the wound, but result in scarring.

The new research determined that one of the genes triggering the white blood cells, and ultimately scarring, is osteopontin (OPN). The researches developed a gel that suppresses the OPN gene at the wound. This can increase the healing rate and will reduce scarring because the white blood cells will not trigger the collagen layers that create the
scar. The gel will increase the healing rate by increasing the regeneration of blood vessels around the damaged area so that tissue reconstruction can take place more efficiently. This will be very important for organ damage because scar tissue can cause complications. With this gel, the tissue can grow back fast, without scarring.

The researchers hope that the new therapy will be available soon in clinic for people suffering burns or large surgical wounds. As of right now, the gel for suppressing the OPN gene is being licensed by a company specializing in wound-healing therapies. Other research at this lab has shown that embryos heal without leaving scars. Scientists are excited to see this same technique work for adults, as well.

In my opinion, this is a great discovery if it actually works. I think it will be interesting to see how the gel works in clinical trials because it would be amazing to see victims of burns and large surgical wounds to have no scar tissue. The most impressive piece of information for me is that we may be able to stop scar tissue from growing after organ damage. If an alcoholic stops drinking and wishes to get healthy, it would be so great to be able to give that person a therapy where the liver repaired itself without scarring to reduce the complications that often lead to liver failure. For others who are involved in accidents where the skin gets damaged badly, the new research could be used to reduce any scars from forming so that the person can lead a normal life later on.

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-Elizabeth Wallace