



## GHK-Cu Peptide Benefits and Uses

Below you will find information on the benefits to this peptide. The information comes from clinical studies done.

### **Skin repair**

GHK-Cu's is well recognized for its ability to repair skin and wounds. Many studies have concluded that this copper peptide promotes wound by increasing levels of antioxidant enzymes, reduces the size of defective tissue which subsequent reduces the amount of tissue requiring repair and increases the speed of tissue growth. It is equally as effective when used topically as it is injected.

### **Anti-aging**

One of the more exciting uses of the copper peptide is the fact that it appears to have very significant anti-aging effects. It seems to have powerful anti-aging effects, including the substantial reduction of wrinkles and fine lines on the skin as well as increasing skin firmness and elasticity. There have been several high-quality controlled experiments using copper tripeptide in creams applied to the skin.

One study of women found that copper peptide was better than vitamin C and retinoic acid in increasing collagen and reducing fine lines and wrinkles. In another study, researchers looked at the effects of GHK-Cu cream on 67 women over 12 weeks. They found that it was very effective at reducing wrinkles and increasing skin thickness. They also found that it was non-toxic and non-irritating.

It is now a very well-known anti-aging agent and can be commonly found in skincare products.



## **Tissue Remodeling**

There seems to be some evidence that it plays a role in remodeling tissue. This means it helps repair damaged tissue, including creating protein synthesis of collagen. Some studies have also found that there is an effect on the repair of lung tissue and in tissue in the digestive system.

## **Hair growth**

Heads up guys: copper tripeptide has been found to be effective in treating hair loss, including male-pattern baldness. In clinical trials, researchers found that it has performed as well as other well-recognized treatment options like Minoxidil. It can also improve the likelihood that hair transplants will be successful.

It looks like it can be used on thinning hair as well, stimulating growth and improving the strength of the hair that's already there.

## **Anti-tumor and cancer**

GHK-Cu has also been found to stimulate the creation of decorin, which is an important component not only in the formation of collagen but also in the defense against cancerous tumors.

Another study also found that copper tripeptide changed the expression of some genes that are involved in the formation and spread of colon cancer meaning it could be effective as a preventative measure.

More research is needed, but there are some promising anti-cancer effects of GHK-Cu.

## **Nerve regeneration**

While the science is not yet settled on all the effects of this copper tripeptide, it looks like it could be used to help nerve regeneration. One study found that GHK-Cu was involved in several processes that improve nerve regeneration. For example, it stimulated the production of nerve growth factors, increased axon count in nerve cells, and increased the proliferation of Schwann cells. Again, more evidence is needed to be sure, but there seem to be some promising findings of GHK-Cu in the regeneration of nerve tissue.



## Anti-Pain, Anti-Anxiety, Anti-Aggression

Research on animals has also suggested that GHK-Cu reduces anxiety, improves tolerance to pain, and reduces aggression. It is suspected that GHK could have similar effects in humans, although this has yet to be confirmed with extensive clinical research.

## GHK-Cu Side Effects

What about the side effects? The benefits are great, but you want to make sure you are not taking anything unsafe.

In general, this peptide is considered very safe. For example, one team of researchers has said that GHK-Cu, “is very safe and no issues have ever arisen during its use as a skin cosmetic or in human wound healing studies”. The safety of this peptide is frequently cited by numerous researchers.

One of the likely reasons that it is not toxic is that it *already* occurs naturally in your body. It is not a foreign substance.

But keep in mind that the research on this stuff is still limited.

## GHK-Cu Creams

As a cream, copper tripeptide seems to be virtually side-effect free. Some studies have concluded that it is non-toxic and doesn't irritate the skin. Applying creams topically has not been found to have any side-effects.

## GHK-Cu Injections

One side effect mentioned by users is that it can be painful to administer via injection. Some people on Reddit have suggested that there can be cramping at the injection site as well. While these have not been long-lasting side-effects, the users have noted some discomfort.



Another side effect is that GHK-Cu peptide can lower blood pressure. That means that you should not take too much at once. See the GHK-Cu dosage guide below for further information.

While there have been very few side-effects found for GHK-Cu, it has not yet been completely researched. To give you a sense of side effects that you could experience, here is a list of side effects that can occur from the use of other peptides:

- *Headache*
- *Dizziness/fatigue*
- *Slightly elevated blood pressure*
- *Nausea*
- *Redness/pain around injection*
- *Increase in appetite.*

## **GHK-Cu Dosage Guide**

Dosing guidelines were difficult to arrive at because there does not seem to be a consensus among scientists. However, after a lot of reading, we did manage to find some guidelines for GHK-Cu in the scientific literature.

First, the dose you use depends on the delivery method you choose. There appear to be several effective delivery methods:

1. GHK-Cu Injections
2. GHK-Cu Topicals



## GHK-Cu Injections

GHK-Cu injections are a common delivery method for regeneration properties, skin effects, and hair growth.

Minimum GHK-Cu dosage: There does not yet appear to be a minimum effective dose identified for injections. We need some more research for that.

Effective GHK-Cu dosage: One study suggests that 100-200 milligrams (mg) at one injection per day would have therapeutic effects. This estimate for humans is based on what has been effective in animal studies. The researchers suggest even that may be an overestimate—it could be effective at much lower doses. So perhaps try a dosage on the lower end to begin with.

Other research suggests that, at least for healing, 50 mg per day would likely be effective. Other studies found that 0.5 micrograms ( $\mu\text{gs}$ ) /kg were effective to reduce anxiety in rats. For a 70kg human, that would be about 35  $\mu\text{gs}$ . A review of GHK-Cu suggests that 35  $\mu\text{gs}$  is a very low and safe dosage.

Lethal GHK-Cu Dosage: It is also good to know that the lethal dose is very, very high. Based on studies on mice, a lethal dose for humans is about 300 mg/kg, or about 21,000 mg for a 70kg human. You should obviously stay well, well below that.

Ideal Dosing: GHK-Cu dosing recommendations are rare in the research we found, if you are staying below 200 mg per day.

Here is a reasonable dosing cycle that has been recommended by some fitness experts:

- *Dose: 1.5 mg per day,*
- *Injected subcutaneously or intramuscularly.*  
*Injection frequency: 1 per day. Or, split the dose into several injections.*
- *Duration: 5-10 days*
- *Cycle: repeat once a year*



1.5 mg per day is a very low dose. You should be able to safely go up to 200 mg per day. But start low and then adjust, as necessary.

*As always, you should consult with a physician before taking any supplements or substances.*

### **GHK-Cu dosing for topicals**

GHK-Cu also comes in a topical serum and creams. Researchers recommend applying creams and serums to the skin after plastic surgery, chemical peels, dermabrasion, laser treatment, and so on. You can also simply apply it to reduce wrinkles and increase skin firmness.

It can be applied in skin solutions like sunscreens, creams, and serums.

Apply as needed. Once or twice a day is enough for skin rejuvenation and hair growth.