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Gut-Targeted Microplastic Detox Using Activated Charcoal, Chitosan, Antioxidants and Probiotic Gummies

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Microplastics, tiny particles less than 5 mm, have been detected in human blood, lungs, placenta, and organs, with the gut being the main site of impact. They enter the body mainly through food, water, and air. In the gut, microplastics can disrupt the intestinal barrier, alter the microbiome, and trigger inflammation that may spread to other organs. Over time, this may lead to hormonal imbalance, fertility problems, lung and liver disorders, and higher risks of cancer and neurodegenerative diseases. Since their long- term effects remain unclear and no effective removal methods exist, microplastic accumulation is a serious public health concern.Currently, there is no medical treatment to remove microplastics from the human body. Available solutions focus on reducing exposure through water filters, air purifiers, bans on microbeads, and dietary measures to strengthen gut health. However, these only limit new intake and cannot remove particles already accumulated in tissues. They are also costly, not accessible to everyone, and lack long-term effectiveness, leaving the health risks unresolved. A novel approach is a microplastic-detox gummy designed to act directly in the gut. It could contain natural binders like alginate, chitosan, or activated charcoal to trap microplastic particles; probiotics to restore gut microbiome balance; and antioxidants such as curcumin, vitamin C, or polyphenols to reduce oxidative stress. Once consumed, binders would attach to microplastics and enhance their excretion, while probiotics and antioxidants protect and repair the gut. This dual action of binding + protection directly addresses the limitations of current.The gummy would be taken daily — two per day for 4–8 weeks as a detox phase, followed by one per day for maintenance. Binding agents consistently trap particles for excretion, while probiotics and antioxidants strengthen gut health. Although benefits may take weeks to appear and full removal of deeply lodged particles could take longer, this offers a practical, safe, and accessible strategy for tackling microplastic health risks.

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