



# Bamboo Fibres in Medical Applications

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## Abstract

A pulsating glacier is one of the unsolved phenomena that occurs in Nature. In this article I would like to continue to talk about the glacier basin of the Fedchenko glacier; we will talk about the Medvezhy glacier. Now it is difficult to find his historical name, and when it stuck with him. In my opinion, the unnamed glacier was nicknamed for its peculiar behavior, which it possesses and resembles a waking bear after a winter sleep. The time periods of its pulsations are 10-12-15 years, and historical notes about the "movement of the glacier" are very scarce, but plausible.

**Keywords:** Global Warming, Glacier Pulsation, Glacier Degradation, Average Air Temperature, Precipitation Amount, Excessive Humidity, Glacier Zone

## Introduction

Bamboo fibers are used in medical applications for their natural antibacterial, antimicrobial, and deodorizing properties, often featuring in wound dressings, surgical gowns, masks, and hospital bedding. Their high moisture absorption, biodegradability, and soft texture make them ideal for sensitive, sustainable, and hygienic healthcare materials.

## Key Medical Applications:

### Wound Care & Dressings

Bamboo fibers are utilized in specialized bandages and surgical gauze due to their high absorbency and ability to inhibit bacterial growth (e.g.E. coli, B. subtilis), enhancing hygiene in wound management.

### Surgical Apparel

100% bamboo fabric is used for surgeon's gowns, masks, and caps. Studies show they effectively reduce bacterial contamination compared to cotton, even after multiple washes.

### Hygiene and Protection

Due to their inherent "bamboo kun" (natural antimicrobial agent), they are used in non-woven medical materials, including disposable masks and antimicrobial textiles.

### Orthopedic/Supportive Products

Bamboo charcoal, derived from fiber processing, is used in products like foot patches to reduce inflammation and improve circulation.

### Advanced Functional Materials

Researchers are developing specialized, superhydrophobic, non-woven bamboo fabrics designed for advanced, biocompatible, and anti-inflammatory medical applications.

These applications capitalize on bamboo's hypoallergenic nature, reducing skin irritation, which is particularly beneficial in long-term patient care and specialized PPE. Bamboo fibers are increasingly utilized in the medical field due to their natural

antimicrobial properties, high absorbency, and biocompatibility. These fibers contain a unique bio-agent called “bamboo kun,” which naturally resists bacteria and fungi, making them ideal for hygiene-sensitive applications.

## Core Medical Applications

### Surgical Clothing

100% bamboo fiber is used to manufacture surgeon’s gowns, face masks, and caps. Studies show these garments effectively inhibit bacterial growth compared to traditional cotton surgical wear.

### Wound Dressings & Gauze

Because it is 40% more absorbent than cotton, bamboo fiber is used in medical gauze and bandages to maintain a sterile environment and manage wound exudate.

### Hygiene & Sanitary Products

Its natural deodorizing and antibacterial nature makes it a preferred choice for sanitary napkins, absorbent pads, and disposable wipes.

### Medical Lifestyle Products

Innovations include antibacterial bed mats for the elderly and hypoallergenic textiles for patients with sensitive skin conditions like eczema or psoriasis.

## Tissue Engineering

Researchers are developing cellulose hydrogel films from bamboo fibers to serve as scaffolds for tissue regeneration.

## Key Therapeutic Properties

### Antimicrobial Efficacy

Unfermented bamboo fibers can demonstrate over 99% inhibition of common bacteria like *E. coli* and *S. aureus*.

### Moisture Management

The fiber’s microstructure is filled with micro-gaps, allowing it to wick moisture away from the skin quickly, reducing the risk of fungal infections and rashes.

### UV Protection

Bamboo textiles can block a significant portion of harmful UV rays, offering a layer of protection for patients with photosensitive skin.

### Dietary Fiber Benefits

Beyond textiles, bamboo fiber is used as a prebiotic to improve gut health, regulate blood sugar, and manage chronic inflammation in metabolic disorders.