ADITUM
Enrich your Research

Orthopaedic Research and Surgery

Opinion Article

Role of knits in Orthopedics and Rheumatology

Dr.N.Gokarneshan
Professor and Head, Department of Textile Chemistry, SSM College of Engineering, Komarapalayam, Tamil Nadu, India.

Article Information

Received: December 20, 2025
Accepted: December 22, 2025
Published: January 05, 2026

***Corresponding author:** N.Gokarneshan, Professor and Head, Department of Textile Chemistry, SSM College of Engineering, Komarapalayam, Tamil Nadu, India.

Citation: N.Gokarneshan. (2026) "Role of knits in Orthopedics and Rheumatology". Orthopaedic Research and Surgery, 6(1); DOI: 10.61148/2994-8738/JORS/063.

Abstract

"Knits" relates to orthopedics and rheumatology in two distinct ways:
As a therapeutic activity for managing symptoms of hand arthritis.
As a type of material used in the manufacturing of medical devices like compression supports, bandages, and even implantable scaffolds.

Knitting as a Therapeutic Activity

For individuals with hand osteoarthritis (HOA) or rheumatoid arthritis (RA), the repetitive, low-intensity movement involved in knitting can serve as a beneficial self-management strategy. It can help in the following ways:

Pain and Stiffness Relief

Gentle, regular hand movement can promote synovial fluid circulation, lubricating the joints and reducing morning stiffness and overall pain perception. The immediate effects can last for several hours.

Improved Flexibility and Strength

Consistent, moderate knitting helps maintain muscle strength and flexibility in the hands, wrists, and fingers.

Psychological Benefits

The activity provides cognitive stimulation and can induce a meditative state, diverting attention from chronic pain signals. This can also help with social isolation if performed in a group setting.

Tips for Knitting with Arthritis

The Arthritis Foundation recommends several adjustments to make knitting more comfortable

Warm up hands in warm water or with gentle stretches before starting.
Use appropriate tools, such as lightweight bamboo or wooden needles, or ergonomic, cubic-shaped needles that require a less forceful grip.
Choose smoother, elastic yarns (like wool or wool blends) over cotton, which requires less tension.
Take frequent breaks to rest the hands and avoid overuse, especially during active inflammatory flares.

Keywords: Knits

"Knits" relates to orthopedics and rheumatology in two distinct ways:

As a therapeutic activity for managing symptoms of hand arthritis.

As a type of material used in the manufacturing of medical devices like compression supports, bandages, and even implantable scaffolds.

Knitting as a Therapeutic Activity

For individuals with hand osteoarthritis (HOA) or rheumatoid arthritis (RA), the repetitive, low-intensity movement involved in knitting can serve as a beneficial self-management strategy. It can help in the following ways:

Pain and Stiffness Relief

Gentle, regular hand movement can promote synovial fluid circulation, lubricating the joints and reducing morning stiffness and overall pain perception. The immediate effects can last for several hours.

Improved Flexibility and Strength

Consistent, moderate knitting helps maintain muscle strength and flexibility in the hands, wrists, and fingers.

Psychological Benefits

The activity provides cognitive stimulation and can induce a meditative state, diverting attention from chronic pain signals. This can also help with social isolation if performed in a group setting.

Tips for Knitting with Arthritis

The Arthritis Foundation recommends several adjustments to make knitting more comfortable

Warm up hands in warm water or with gentle stretches before starting.

Use appropriate tools, such as lightweight bamboo or wooden needles, or ergonomic, cubic-shaped needles that require a less forceful grip.

Choose smoother, elastic yarns (like wool or wool blends) over cotton, which requires less tension.

Take frequent breaks to rest the hands and avoid overuse, especially during active inflammatory flares.

Knitted Materials in Medical Devices

Knitted fabrics are widely used in orthopedics due to their unique properties, such as breathability, elasticity, and comfort, which are vital for products worn for long periods.

Compression Products

Knitted materials are the basis for most compression bandages and orthopedic supports (e.g., knee or ankle braces). They are engineered to provide specific, controlled pressure to a limb, which aids in recovery, manages swelling (edema), and provides support.

Implantable Textiles

Advanced knitting techniques are used to create complex implantable medical devices. Examples include artificial ligaments (using silk or polyester scaffolds), vascular grafts, and hernia patches. The porous structure of knitted fabrics allows for better tissue integration and sometimes drug delivery.

Customization

Modern knitting machines can produce customized, shaped products that match a patient's anatomy precisely, improving both the fit and functionality of the medical support.

References

1. Canale S, Beaty J, Azar FM, Beaty JH. Major Procedures in Orthopedic Surgery and Traumatology. 1st ed. Campbell. Elsevier; 2016.
2. Sloan M, Premkumar A, Sheth NP. Projected Volume of Primary Total Joint Arthroplasty in the US, 2014 to 2030. J Bone Joint Surg Am. 2018; 100:1455.
3. Friedman DW, Orland PJ, Greco RS. Biomaterials: An Historical Perspective. In: Greco RS, editor. Implantation Biology: The Host Response and Biomedical Devices. Boca Raton, FL: CRC Press; 1994. p. 1–12.
4. McKee, Ferrar. J Bone Joint Surg. 1966;48B (2):245.
5. Callaghan JJ, Rosenberg AG, Rubash HE. The adult hip: Volumes I and II. Philadelphia, PA: Lippincott Williams & Wilkins; 2007.
6. Murray DG. Total hip replacement. NIH Consensus Statement. 1994 Sep 12–14;12(5):1–31.
7. Praemer A, Furner S, Rice DP. Musculoskeletal conditions in the United States. Illinois: American Academy of Orthopaedic Surgeons; 1992. p. 127–41.
8. Khanuja HS, Vakil JJ, Goddard MS, Mont MA. Cementless femoral fixation in total hip arthroplasty. Bone Joint J. 2011; 93:500e9.
9. Marco R, Daniel BB, Michael AM, Schwarzkopf R, Matthew H. A New Classification System for Cementless Femoral Stems in Total Hip Arthroplasty. The Journal of Arthroplasty. 2023;38(3):502–10.
10. Healy WL, Tilzey JF, Iorio R, Specht LM, Sharma S. Prospective, randomized comparison of cobalt-chrome and titanium trilock femoral stems. J Arthroplasty. 2009; 24:831e6.
11. Albrektsson T, Johansson C. Osteoinduction, osteoconduction and osseointegration. Eur Spine J. 2001: S96e101.
12. Jo WL, Lee YK, Ha YC, Park MS, Lyu SH, Koo KH, et al. Frequency, developing time, intensity, duration, and functional score of thigh pain after cementless total hip arthroplasty. J Arthroplasty. 2016; 31:1279e82.
13. Nam D, Sauber TJ, Barrack T, Johnson SR, Brooks PJ, Nunley RM, et al. Radiographic parameters associated with pain following total hip and surface arthroplasty. J Arthroplasty. 2015; 30:495e501.
14. Ishii S, Homma Y, Baba T, Ozaki Y, Matsumoto M, Kaneko K, et al. Does the canal fill ratio and femoral morphology of Asian females influence early radiographic outcomes of total hip arthroplasty with an uncemented proximally coated, tapered-wedge stem? J Arthroplasty. 2016; 31:1524e8.