



Q/ Does knuckle popping lead to arthritis?

EVIDENCE-BASED ANSWER

A | No, habitual knuckle popping, or cracking (over the course of several decades) isn't associated with clinical or radiographic evidence of osteoarthritis (strength of recommenda-

tion [SOR]: **B**, retrospective cohort and case control studies). However, attempting to pop the knuckles can produce acute soft tissue injury (SOR: **C**, case reports).

Evidence summary

A cross-sectional study found no correlation between knuckle popping and osteoarthritis (OA) of the hand.¹ Investigators recruited 300 consecutive patients (ages 45 years and older, mean age 63 years) and evaluated them for a history of habitual knuckle popping (74 of 300 patients, mean duration 35 years) and hand arthritis or dysfunction. Investigators excluded patients with neuromuscular, inflammatory, or malignant diseases.

Investigators found OA equally in both patients who did and didn't pop their knuckles (12 of 74 vs 36 of 226, respectively; *P* non-significant); joint swelling was more common in participants with a history of knuckle popping (84% vs 6%; *P*<.01). Investigators didn't describe how OA was diagnosed or specify which joints were affected.

Another cross-sectional study also found no correlation between habitual knuckle popping of the metacarpal phalangeal joint and the prevalence of OA in that joint.² Investigators recruited 28 patients (mean age 78.5 years; 23 women and 5 men) from a Jewish home for the aged and asked them whether they had habitually cracked their knuckles during their lifetime. They then performed clinical and radiographic hand examinations (excluding patients with a history of traumatic injury, rheumatoid arthritis, gout, chondrocalcinosis, and hemochromatosis).

Knuckle popping didn't correlate with

OA of the metacarpal phalanges (1 of 15 knuckle popping patients vs 5 of 13 patients who didn't pop their knuckles; *P*=.06). All 6 patients with radiographic evidence of OA showed involvement at the metacarpal phalangeal and distal interphalangeal joints, whether or not they popped their knuckles.

Years spent cracking knuckles doesn't predict OA

A case control study found no correlation between OA in the hands and habitual knuckle popping.³ Investigators recruited 215 patients 50 to 89 years old who had received a radiograph of their right hand during the previous 5 years and divided them into cases with OA (135 patients), and controls without OA (80 patients). Patients completed questionnaires assessing the prevalence (20%), frequency (1 to 20 times per day), and duration (26 to 36 years) of knuckle popping.

Patients most commonly popped proximal interphalangeal joints (15.9%) followed by metacarpal phalangeal joints (13.5%), distal interphalangeal joints (6.1%), and first carpal metacarpal joints (2.3%). OA most often affected the distal interphalangeal joint (68.4%), followed by the first carpal metacarpal (57.1%), proximal interphalangeal (54.1%), and metacarpal phalangeal joints (28.6%). Investigators found no difference in the prevalence of knuckle popping between cases and

Tye Powers, MD;
Gary Kelsberg, MD
Valley Family Medicine
Residency, University of
Washington at Renton

Sarah Safraneck, MLIS
University of Washington
Health Sciences Library,
Seattle

ASSISTANT EDITOR

Jon O. Neher, MD
Valley Family Medicine
Residency, University of
Washington at Renton

controls (18% in cases vs 23.2% in controls; $P=.361$).

When investigators evaluated total knuckle popping exposure in “crack years” (number of times per day multiplied by years) in the distal interphalangeal or metacarpal phalangeal joints, they found no significant association between crack years and OA (distal interphalangeal joint, mean 108 crack years; metacarpal phalangeal joint, mean 75 crack years).

50 years of knuckle popping without ill effects

An n-of-1 case control study found similar results.⁴ The researcher, a physician, popped

only the knuckles of his left hand, twice a day, for 50 years. He compared his hands at the end of the trial and found no arthritis in either hand and no visible differences.

But knuckle popping does have a downside

A paper described 2 case reports of acute injuries sustained during attempted knuckle popping—a partial tear of the ulnar collateral ligament of the thumb and subluxation of the extensor tendon of the fifth digit.⁵ Both injuries were associated with forceful manipulation of the digits, and both resolved with conservative management within 4 weeks.

JFP

References

1. Castellanos J, Axelrod D. Effect of habitual knuckle cracking on hand function. *Ann Rheum Dis*. 1990;49:308-309.
2. Swezey RL, Swezey SE. The consequences of habitual knuckle cracking. *West J Med*. 1975;122:377-379.
3. Deweber K, Olszewski M, Ortolano R. Knuckle cracking and hand osteoarthritis. *J Am Board Fam Med*. 2011;24:169-174.
4. Unger DL. Does knuckle cracking lead to arthritis of the fingers? *Arthritis Rheum*. 1998;41:949-950.
5. Chan PS, Steinberg DR, Bozontka DJ. Consequences of knuckle cracking: a report of two acute injuries. *Am J Orthop (Belle Mead NJ)*. 1999;28:113-114.

NOW ONLINE AT WWW.JFPONLINE.COM

A supplement to The Journal of Family Practice

Advances in Colorectal Cancer Screening

Author

Anas Daghestani, MD
 Director of Population Health
 and Clinical Quality
 Austin Regional Clinic
 Austin, Texas

Discussion includes:

- Colonoscopy
- Computed tomography colonography
- Fecal occult blood test and fecal immunochemical test
- Multitarget stool DNA testing



This supplement is supported by funding from Exact Sciences.