

Welcome to

LE MOINEAU SCIENTIFIQUE

**For the most updated science
of performance and prevention
in badminton**

presented by

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How to

INCREASE RACKET WHIP SPEED ON THE SMASH

**A study published by japanese researchers
measuring shoulder strength and smash
speed of 14 collegiate badminton athletes**

**concluded that there was a positive
correlation between the strength of
a particular shoulder movement and
the forehand smash's whip speed**

**Awatani, T., et al. (2018). "Correlation between
isometric shoulder strength and racket velocity
during badminton forehand smash movements:
study of valid clinical assessment methods."
Journal of Physical Therapy Science 30(6): 850-854.**

A



B



The arrow indicates the direction at which I must push with all my strength.

Which one of these movements can give the best estimation of my smash's whip speed?



C

D

The answer is B.

Researchers discovered that there was a strong correlation between

**SHOULDER INTERNAL ROTATION
STRENGTH WITH THE ARM
SIDEWAYS HORIZONTALLY**

and the forehand smash's whip speed

**In other words, the stronger this
shoulder movement is, the snappier
the racket will be on the smash**

What are the implications?

For athletes

You must STRENGTHEN your shoulder internal rotation!

The STRONGER your internal rotation is, the STRONGER your smash will be!

For coaches

Measuring shoulder internal rotation strength is an easy way to objectify and rank your athletes' smash performance.

Gym training is a good complement to standard smash training which can be hard on the shoulder for some athletes.

Try this exercise!

OPTION #1

**Isometric strengthening of
shoulder internal rotation
against the wall**



**Push
5 seconds**

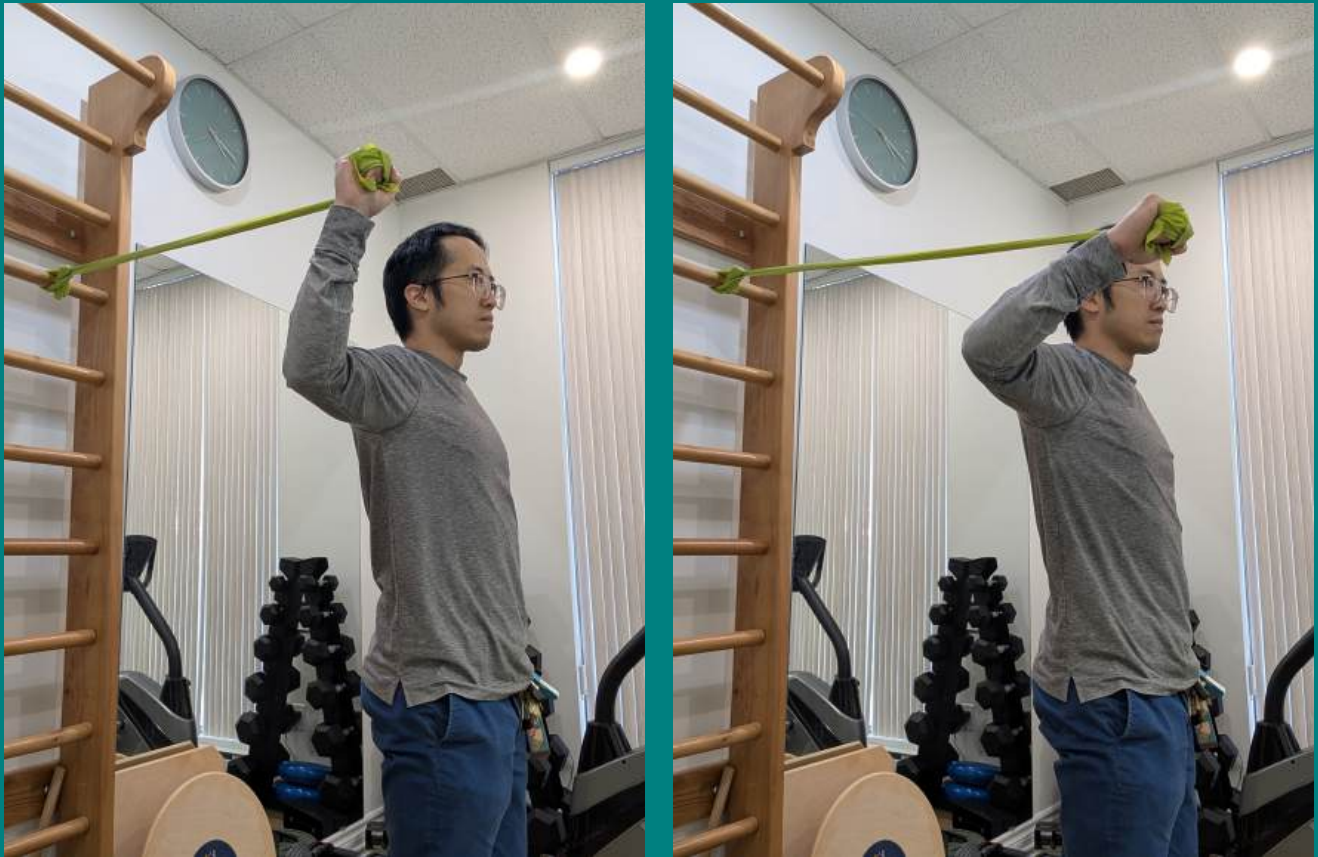
**Relax
5 seconds**

10 reps

Try this exercise!

OPTION #2

**Strengthening of
shoulder internal rotation
with an elastic**



**Pull quickly then return slowly
Until fatigue (10-20 reps)**

Try this exercise!

OPTION #3

**Strengthening of
shoulder internal rotation
with a dumbbell**



**Lift up quickly, return slowly
Until fatigue (10-20 reps)**