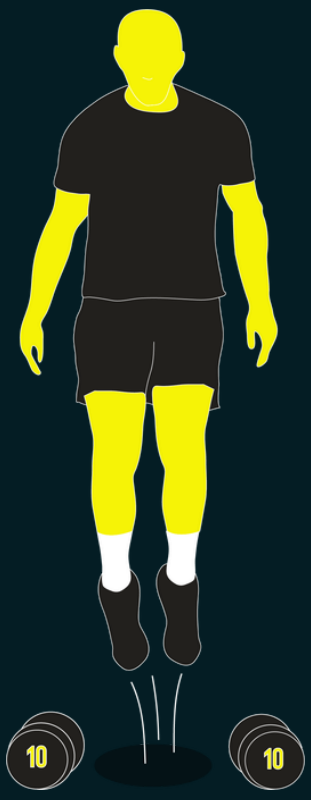
Sportsmith



SLOW SSC JUMP TRAINING MINI TOOLKIT

Adapted from Eamonn Flanagan

SEE PRESENTATION

Slow SSC Training

This toolkit offers holistic insight into slow SSC training. Uncover the underlying neural and mechanical principles behind jump training, whilst understanding exercise selection, intensity classification, and loading parameters which will guide your programing decisions.

SLOW SSC TRAINING: ITS IMPORTANCE AND COMPARISON TO "TRUE PLYOMETRICS"

Slow stretch shortening cycle (SSC) training is often widely overlooked, with a larger emphasis being placed upon plyometrics which elicit shorter ground contacts and utilize the SSC in a faster manner.

However, the neural and mechanistic similarity of slow SSC actions, when compared with numerous sport-specific actions, reinforces the importance of slow SSC jump training.

With contraction times typically between 300-900ms, slow SSC jump training encompasses dynamic strength efforts, and bridges the gap between reactive and maximum strength characteristcs.

JUMP TRAINING VS. "TRUE" PLYOMETRICS

Besides contraction times, the other key factors which seperate jump and "true" plyometric training are the dominating joints which contribute to movement, angular displacement across these joints, and reliance upon neural drive (Figure 1).

	JUMPS	PLYOMETRICS
	"Jump"	"Bounce"
Descriptor & Examples	Vertical jump Broad Jump	Pogo jump Drop jump
Joint Dominance	Knee / Hip	Ankle/Knee

	JUMPS	PLYOMETRICS
Angular Disp. (ROM)	Large	Small
Eccentric RFD	Slow	Fast
Contraction time	300 - 900ms	120-250ms
SSC	Slow	Fast
Mechanical factors	Muscle fascicle lengthening Active eccentric force	Quasi isometric Tendon stretch / recoil
Neural factors	Increased neutral drive reflex contributions	Pre-activation Stiffness
Energy cost	High (Active muscle work)	Low (Elastic efficiency)
Strength Quality Development	Fast Max. Dynamic Str. Explosive Str.	Reactive Str.

Figure 1. Comparison of jump nad plyometric traiing across key programming factors

JUMP TRAINING INTENSITY

It is key to acknowledge and understand the path of intensitfication when it comes to jump trianing (Figure 2).

Consider additional means of intensification via unilateral take-offs and landings, loading jumps, and manipulation of limb kinematics (e.g., tucked vs. untucked legs).

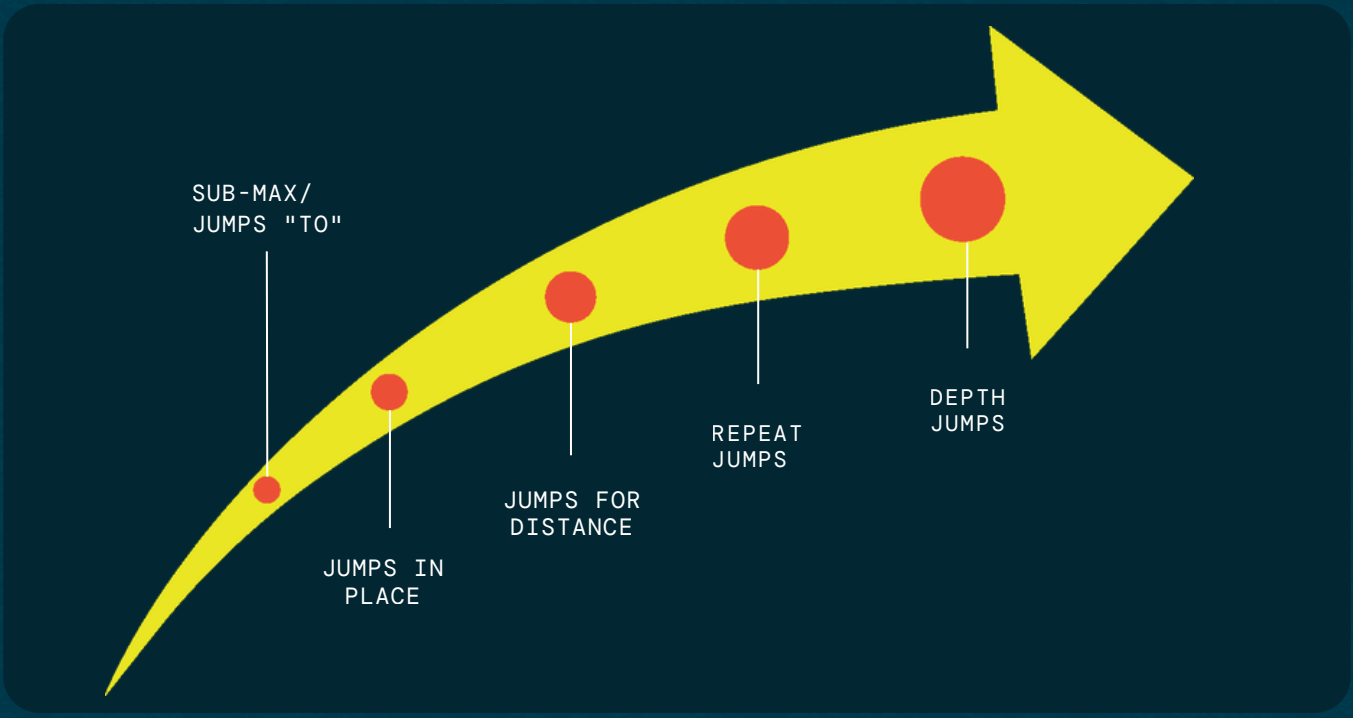


Figure 2. Intensity pathway of various types of jumps

Be specific when selecting jumps in terms of where they lie on a wider continuum of biomotor expression (Figure 3).

Prevent premature intensification along this continuum in order to avoid monotony and stagnation of both neural and mechanical development.

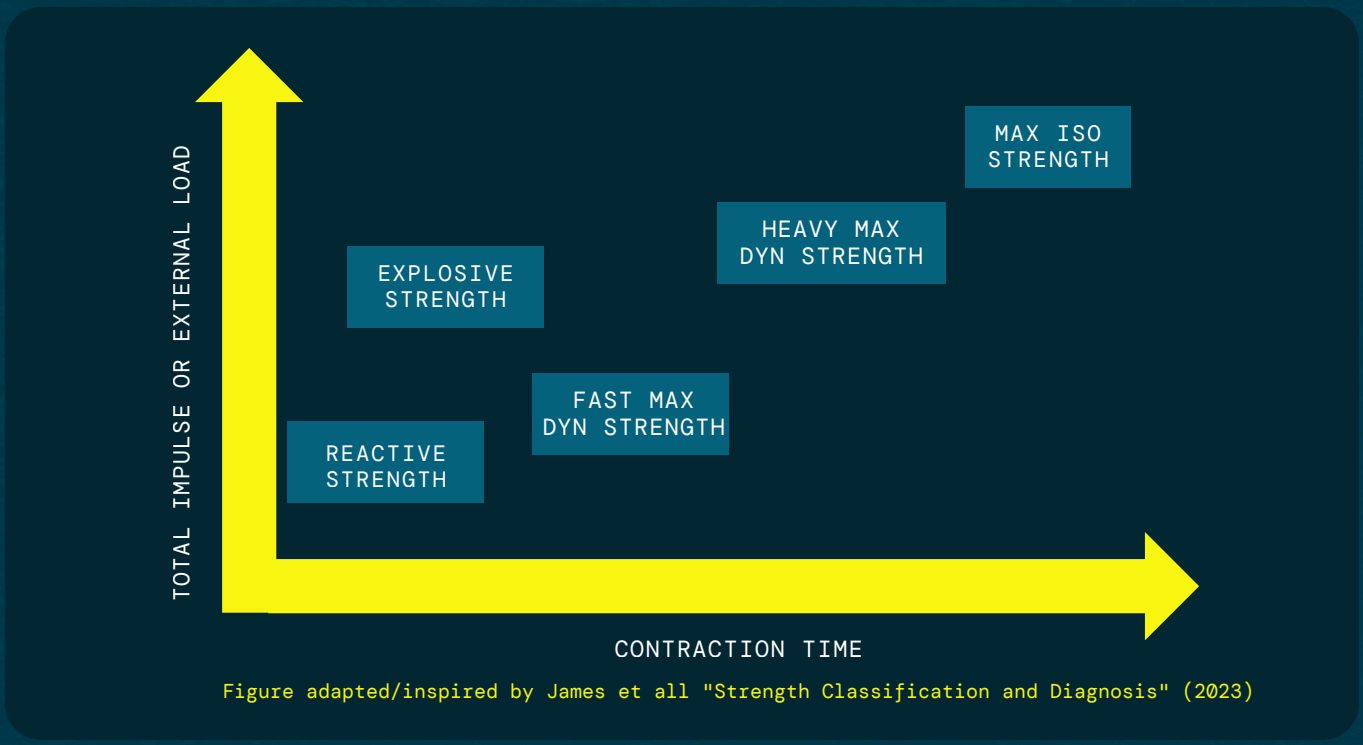
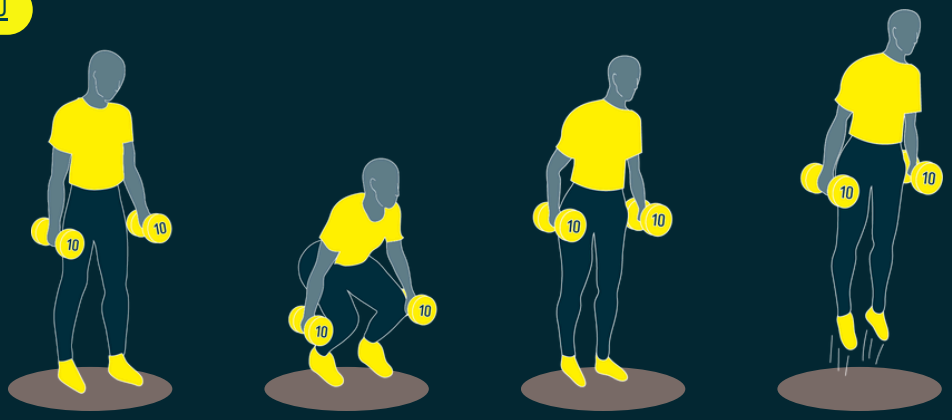


Figure 3. Continuum of biomotor abilities relative to impulse, load and contraction time

JUMP TRAINING METHODS

LOADED JUMPS

Loaded CMJ

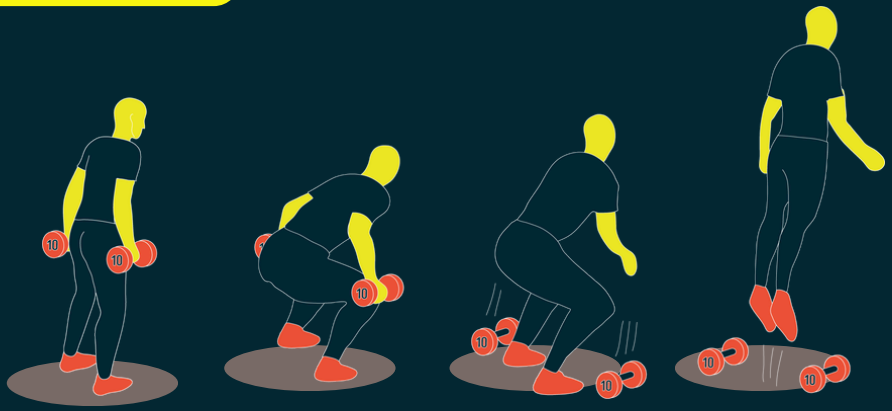


ASSISTED JUMPS

Band Assissted Repeated Jumps

ACCENTUATED JUMPS

Accentuated Eccentric CMJ



TO LOAD OR NOT TO LOAD...

Prescribing load to jump training poses significantly different constraints on the task.

The big question: "Do you want to preserve the SSC in light of your desired training outcome?"

Considering what your purpose is when selecting a load is key. A clear picture must be kept when selecting which of the following variables, when manipulated, will answer that purpose: Take-off velocity, eccentric velocity, RoM, impulse eccentric/concentric bias.

DYNAMIC STRENGTH (THROUGH LOADED JUMPS)

FAST DYNAMIC STRENGTH:
3-6 SETS X 3-5 REPS
@ 20-30% BM

HEAVY DYNAMIC STRENGTH:
3-6 SETS X 3-5 REPS
@ ⩾50%BM