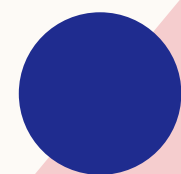
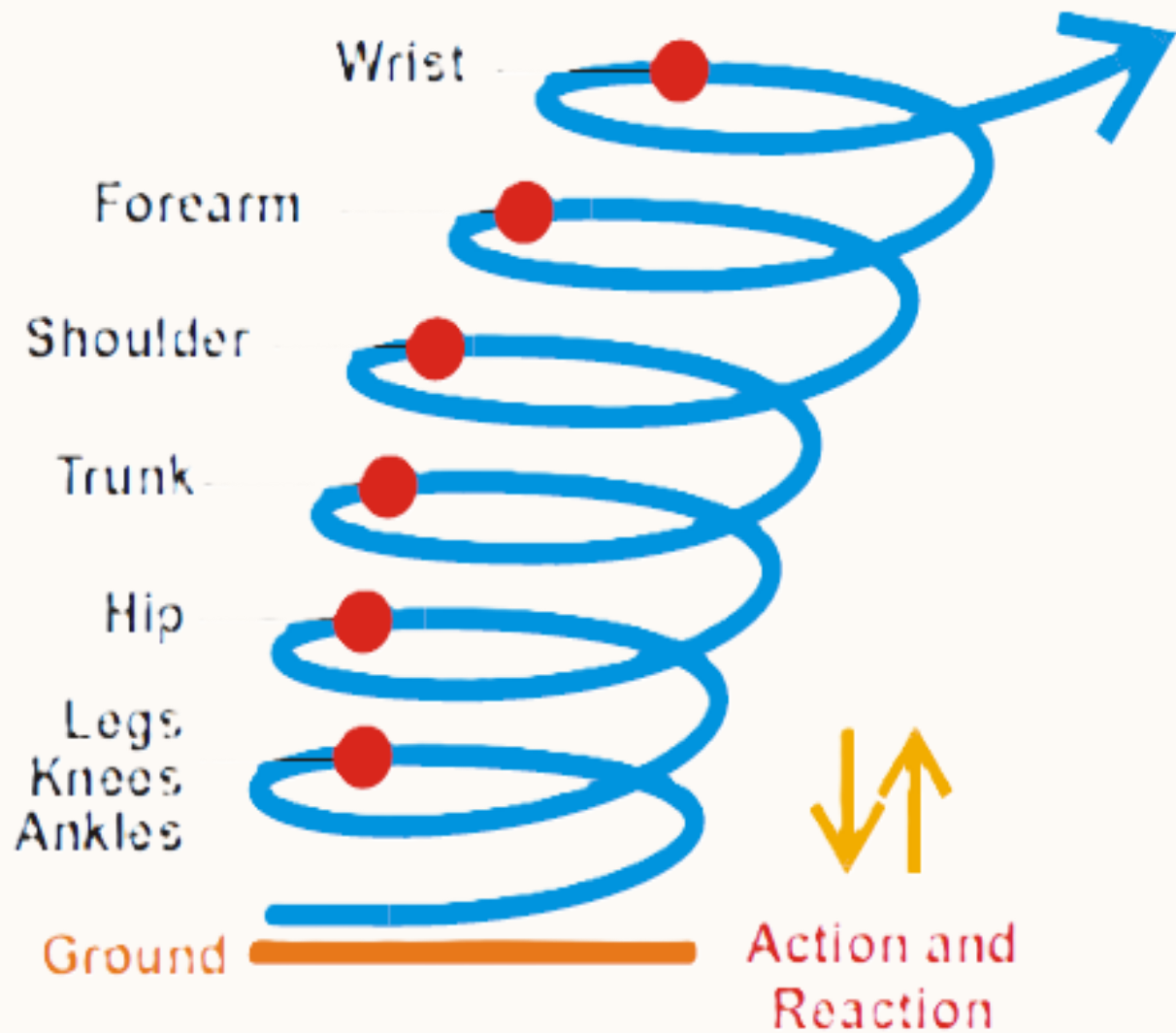


MODULE 4

TENNIS UPPER BODY ROTATIONS + STABILITY

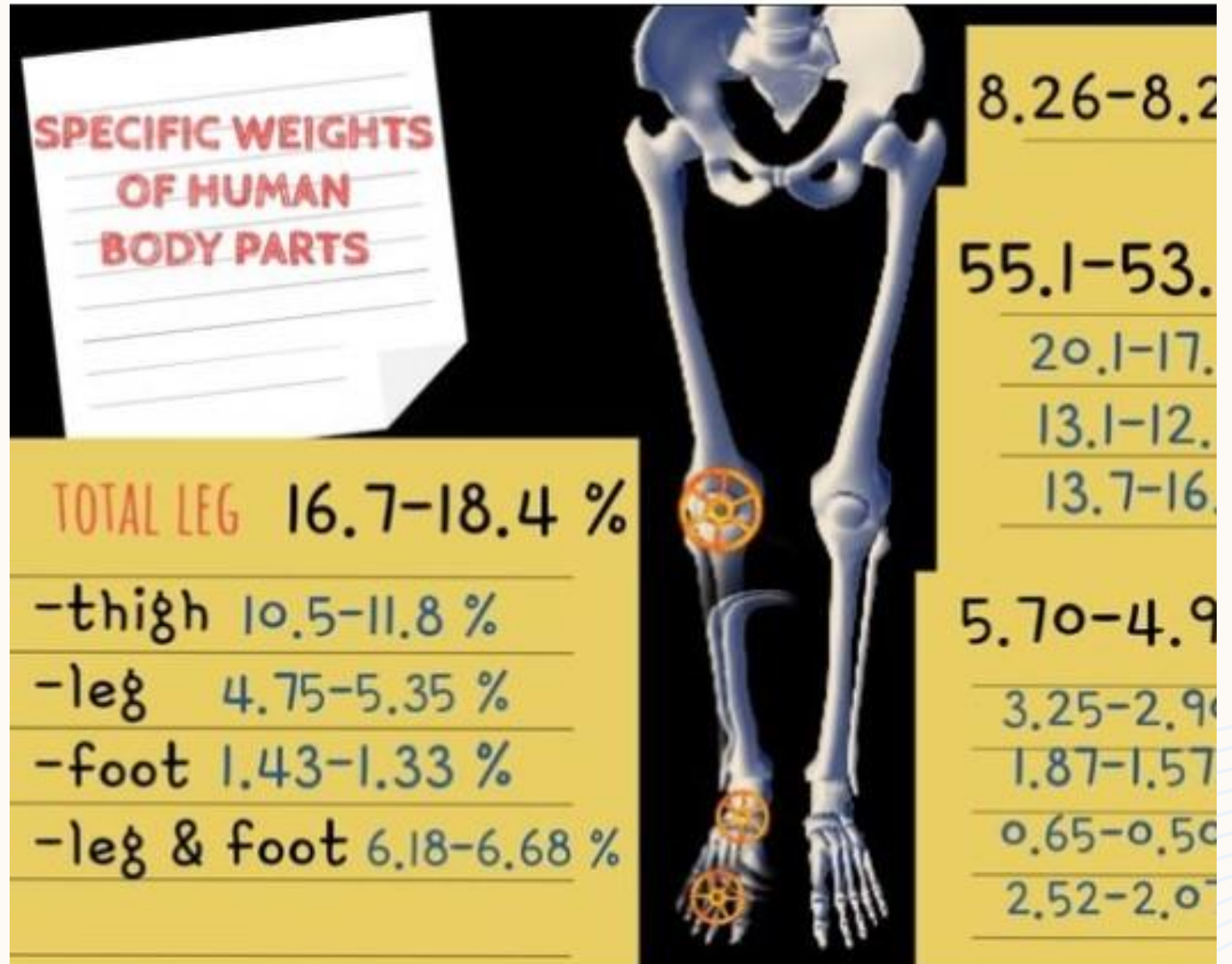


UNDERSTANDING OF THE KINETIC CHAIN IN TENNIS STROKES



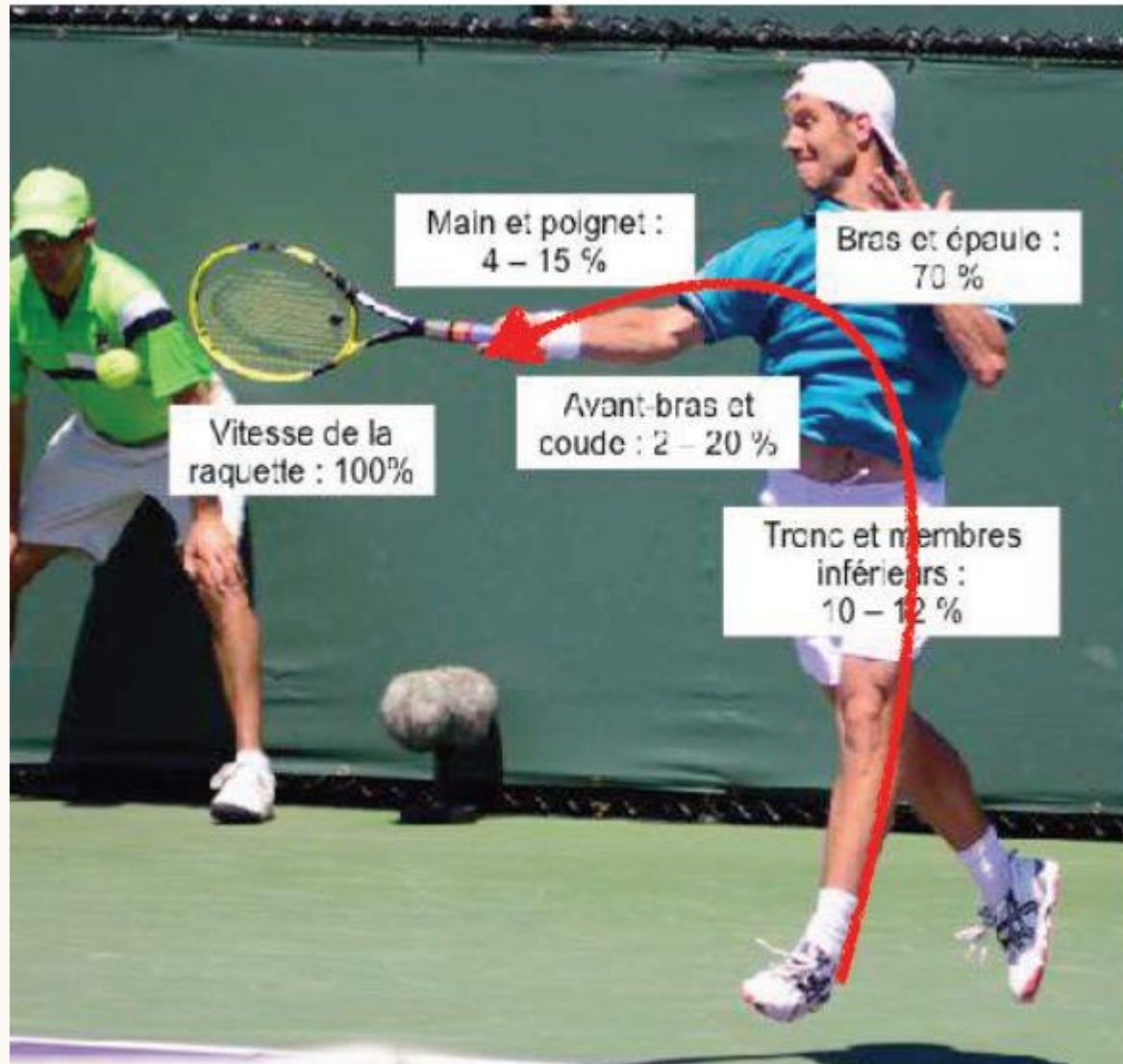


UNDERSTANDING THE BODY WEIGHT OF BODY PARTS TO INCREASE WEIGHT TRANSFER IN ANY TENNIS SHOTS



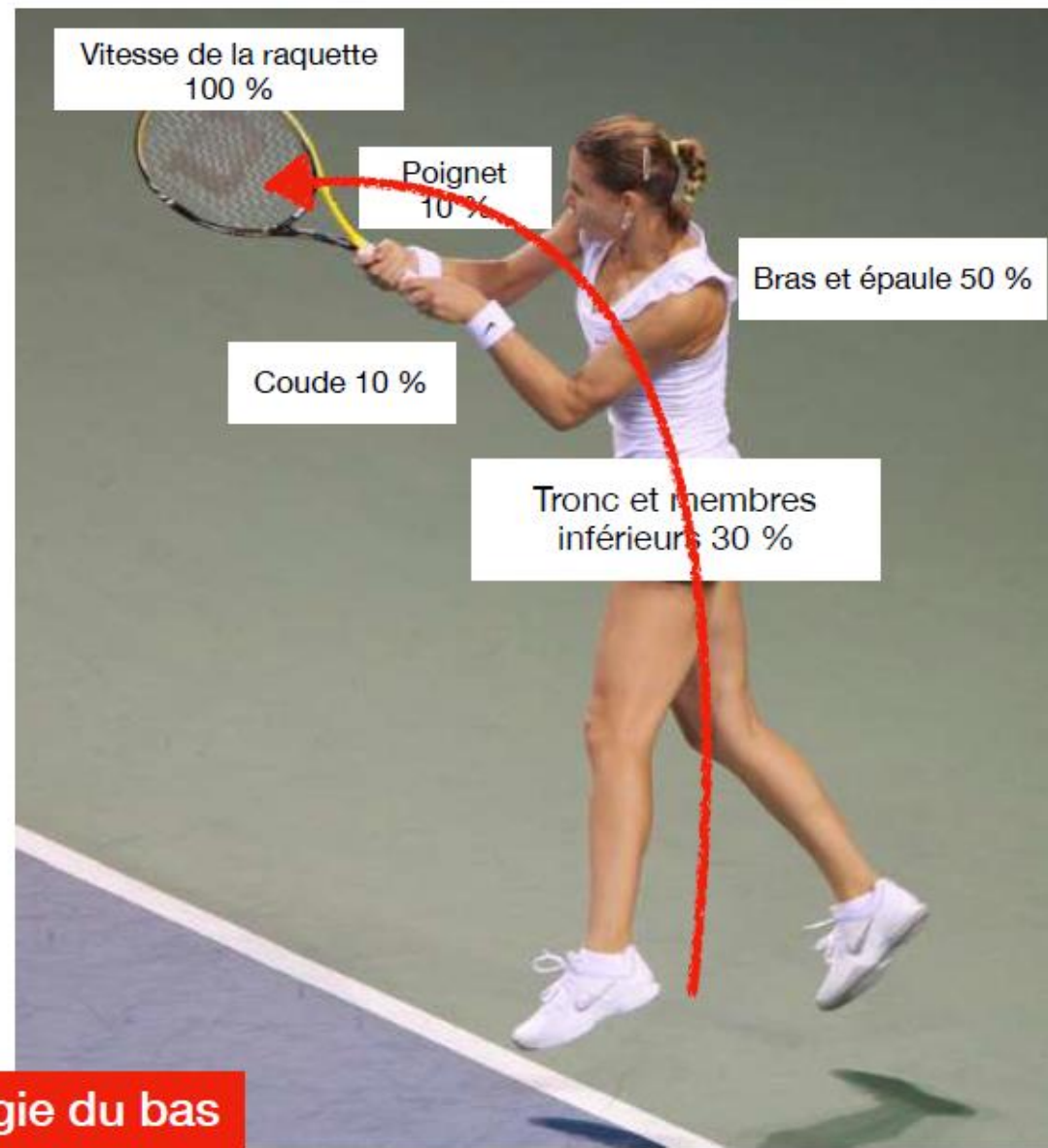
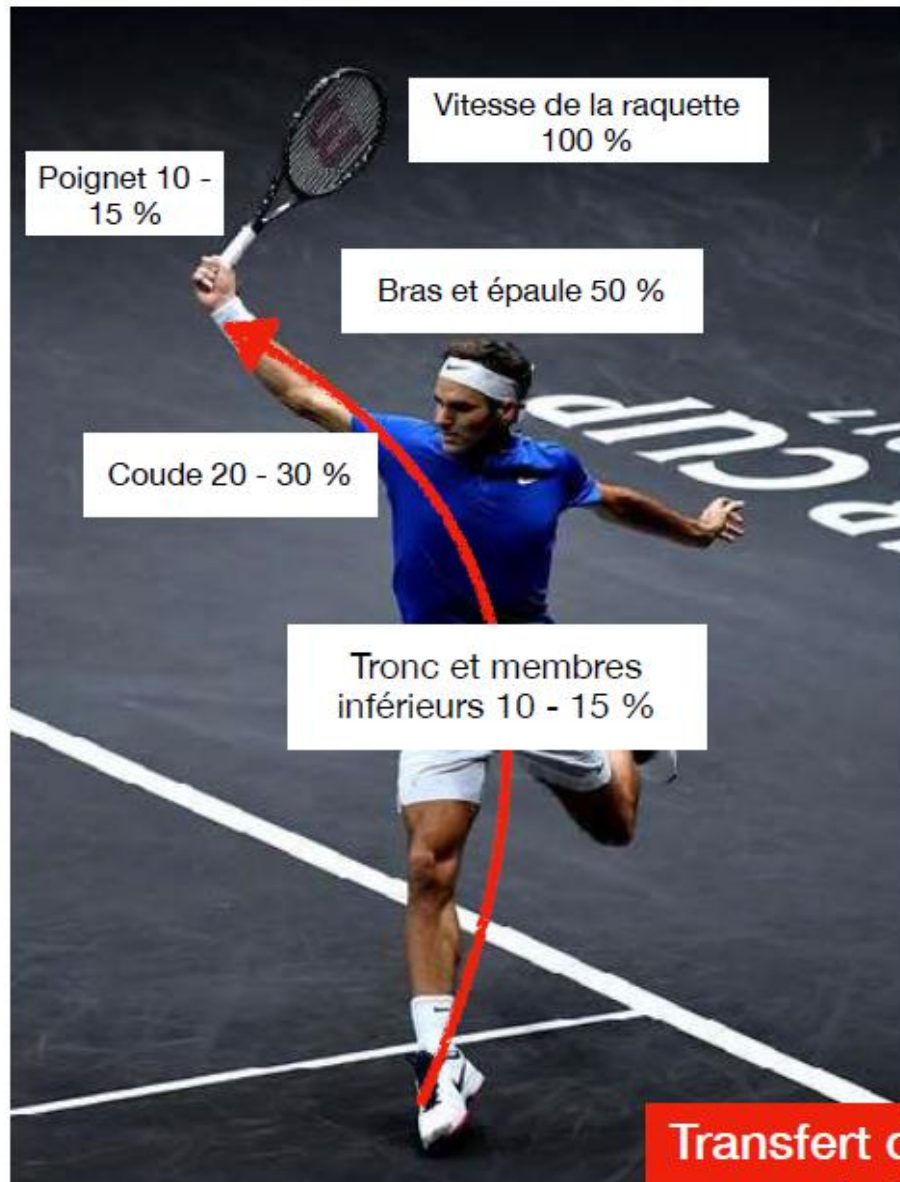


FOREHAND KINETIC CHAIN AND BALL SPEED





BACKHANDS KINETIC CHAIN AND BALL SPEED



**Transfert d'énergie du bas
vers le haut du corps**



THE 4 TENNIS PLAYERS MOTRICITY PREFERENCES



DISSOCIATE
FEET
GROUNDED



ASSOCIATE
HAMSTRING
GROUNDED



AERIAL
HAMSTRING
DISSOCIATE



AERIAL
FEET
ASSOCIATE



DOMINANT SHOULDER

7



- IT'S THE SHOULDER WHO YOU WILL PREPARE THE TAKE BACK TO ROTATE THE SHOULDERS LINE
- WHO HERSELF INITIATED BY THE HIP ROTATION
- IT'S THE SHOULDER WHO PREFERE COME FORWARD
-

2 CASES IN TENNIS

-
- **DOMINANT SHOULDER : LONG –SHORT-**
- **LONG TAKEBACK-SHORT FINISH**
-
- **DOMINANT SHOULDER : SHORT – LONG**
- **SHORT TAKEBACK-LONG FINISH**



PLAYER DOMINANT SHOULDER

8

• POSITIONING OF THE DOMINANT SHOULDER

•

Slightly in front before an action

•

For return of serve

FEDERER FOREHAND
LEFT DOMINANT SHOULDER

LONG ROTATION TAKE BACK
SHORT ROTATION FINISH

WARWINCKA FOREHAND
RIGHT DOMINANT SHOULDER

SHORT ROTATION TAKE BACK
LONG ROTATION FINISH





FOR LEFTY PLAYERS



FOREHAND
LEFT DOMINANT
SHOULDER

SHORT TAKEBACK
LONG FINISH

9

BACKHAND
LONG TAKE BACK
SHORT FINISH





MOBILE POINT PREFERENCE AND LOCATION

10

IMPORTANT
MOBILE POINT (ENERGY) AIM TO THEN TARGET ZONE TO PLAY

**NADAL
DISSOCIATED PLAYER
MOBILE POINT IN D 8**



**FEDERER
ASSOCIATED PLAYERS
MOBILE POINT IN L 5**



BACHKAND MOBILE POINT PREFERENCES¹¹

DISSOCIATED



ASSOCIATED

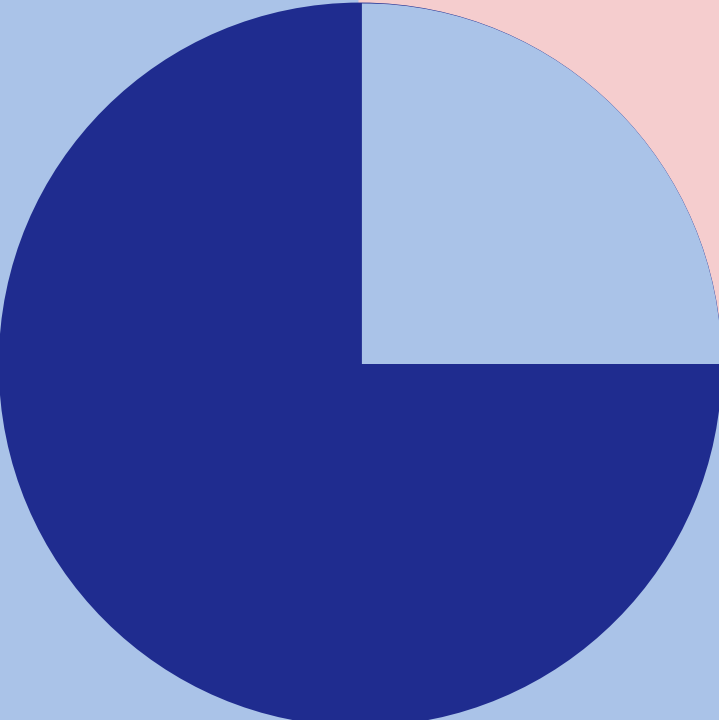
MOBILE POINT BACKHAND PREFERENCES₁₂



ASSOCIATED



DISSOCIATED





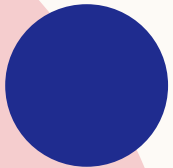
MOBILE POINT PREFERENCES IMPACT



ASSOCIATED
L 5



DISSOCIATED
D 8



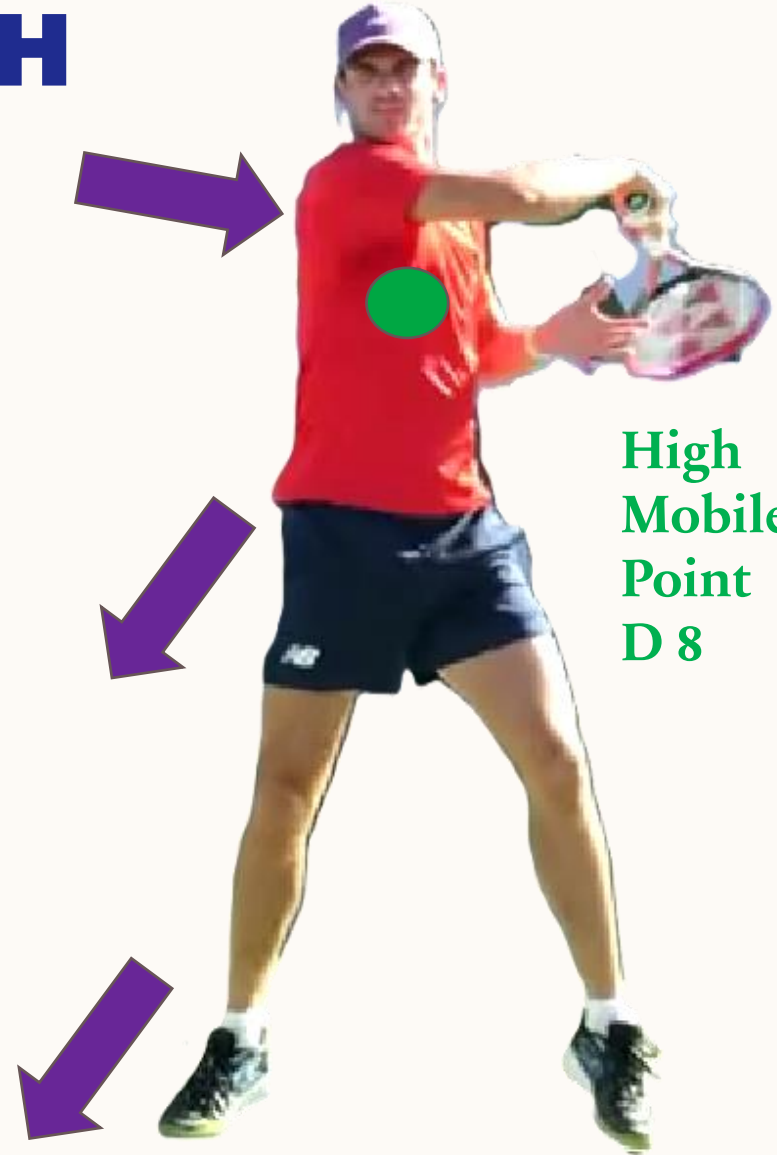


MOBILE POINT PREFERENCES ON THE FINISH



Low
mobile
Point
L 5

RAPPEL
MOBILE
POINT(ENERGY)
AIM
TOWARD THE
TARGET



High
Mobile
Point
D 8



TRUNK TAKE BACK DISSOCIATIONS ROTATIONS EXTREME CASES



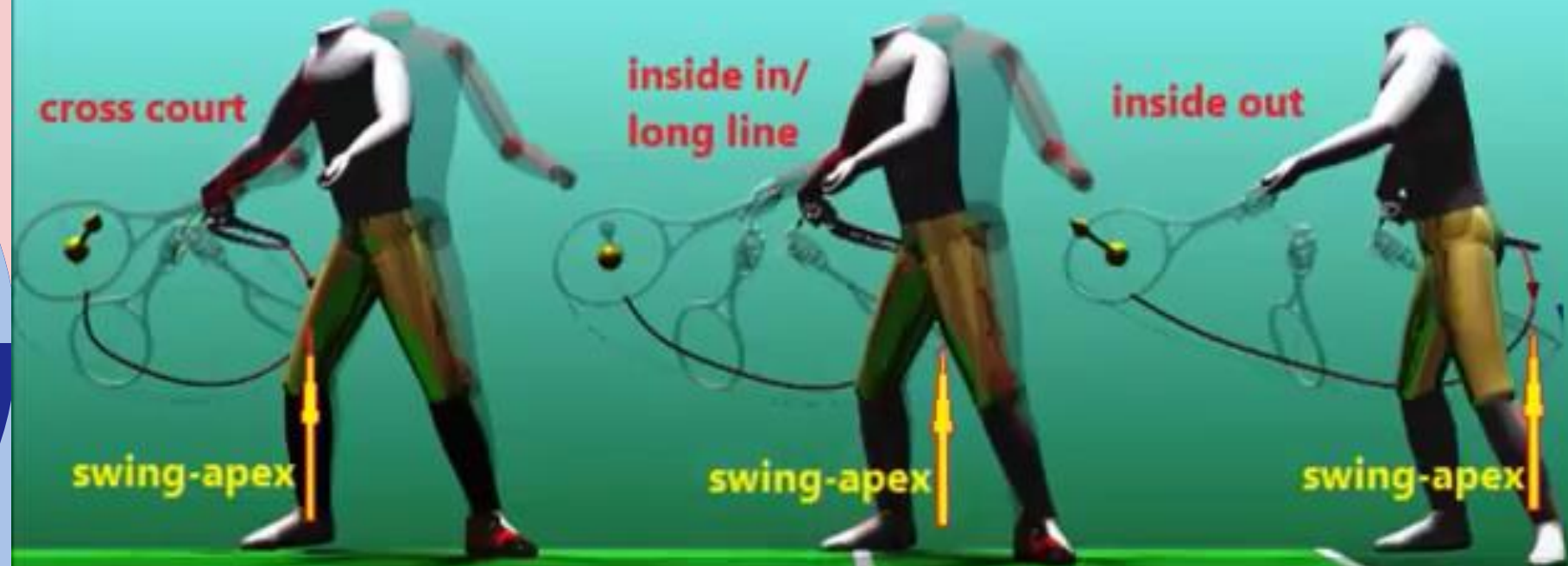


TRUNK ROTATIONS ADAPTATIONS ROLE OF THE TRUNK

PUSH THE SHOULDER FORWARD

PULL THE ARM AND RACQUET FORWARD

Turn/align your shoulders in the direction of the shot.

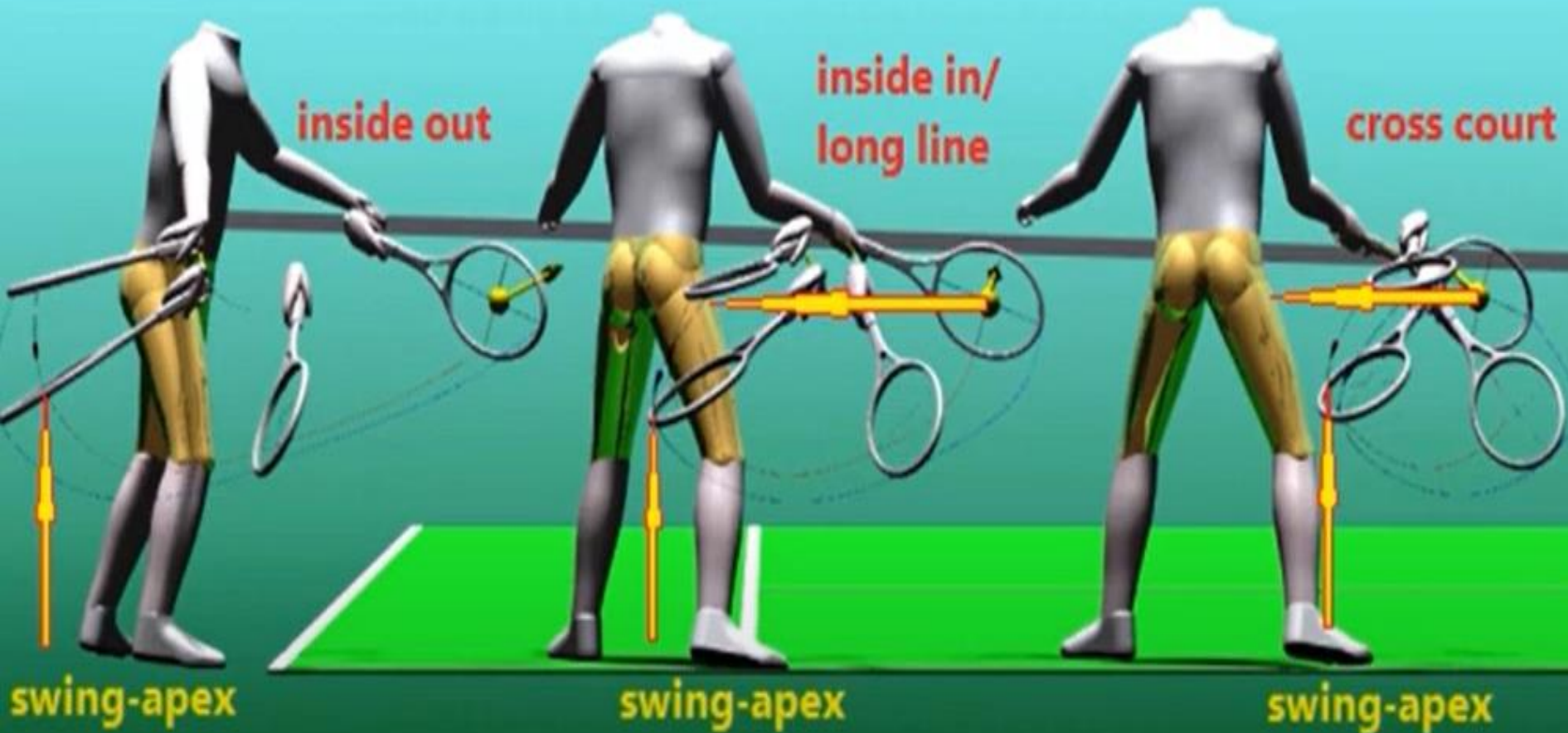


The shoulders turning/alignment by the backswing is decisive

TRUNK ROTATIONS ADAPTATIONS



The biomechanics of the shoulder/arm joints defines the optimal impact zone.



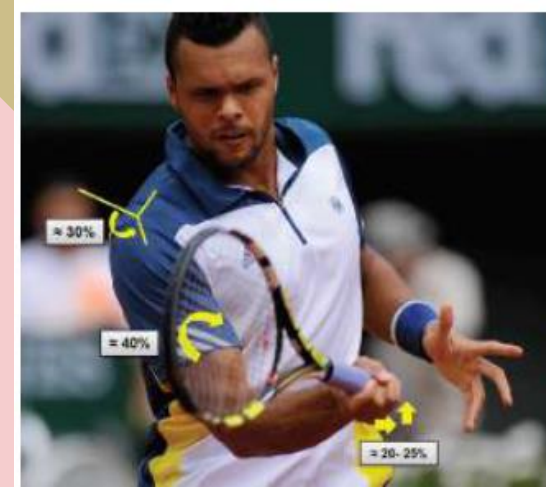


TRUNK ROTATION TIMING

THE TRUNK IS THE ACCELERATOR OF THE BALL SPEED

START THE ROTATION AT THE RIGHT TIME

TRIPLE EXTENSION OF THE LEG INITIATE THE TRUNK ROTATION
ANKLE + KNEE+ HIP





There is some serious confusion about rigidity versus relaxation at contact. First what does relaxation mean? This is very ambiguous metaphor. Does it mean that extensors and flexors are not simultaneously activated? the use of the term "relaxation" is problematic and should be avoided.

Stanley Plagenhoef [Plagenoef, 1971: 64] notes "The ability to attain body rigidity during impact is a key to better performance...". Plagenhoef was one of the most important pioneers in the study of kinesiology.

While "relaxation" is necessary when performing fine motor control actions in musical performance such as the violin or drums, this rule does not apply to gross motor control of large muscle groups as evidenced by the examples in Figure below: Gross and fine motor control are very different and in tennis; relaxation during contact will likely result in a loss of racquet control because of the compound gross motor movements needed to control the racquet direction (and body) at high speed. This does not happen when sitting or even standing in one place as is required by musical performance.



Figure 1: Body rigidity at contact is essential for control and production of power using large muscle groups

TRUNK ADAPTATION TO THE BALL HEIGHT

20



TRUNK ADAPTATION TO TACTICAL SITUATIONS

21



TRUNK TILTS AND ROTATIONS-CENTER OF MASS MOMEMTUM

THE 3 BODY POWER MOMEMTUM -STANCES WILL BE ADAPTED AND MIXED DEPENDING THE SITUATION WITH ACTION-REACTION OF THE LEG FEET LOADING-LANDING

VERTICAL POWER MOMEMTUM

ANGULAR POWER MOMEMTUM

LINEAR POWER MOMEMTUM



Back foot



Outside foot



Front foot



DEFENSIVE COUNTER-ATTACK SITUATION

- Back foot pivot
- Back foot hop
- Reverse spin
- Power step
- Mogul step

RALLY SITUATION

- One foot pivot
- Two-foot pivot
- Front foot pivot
- Lateral hop

OFFENSIVE SITUATION

- Front footstep forward
- Front foot hop
- Forward trunk transfer
- Spin hips



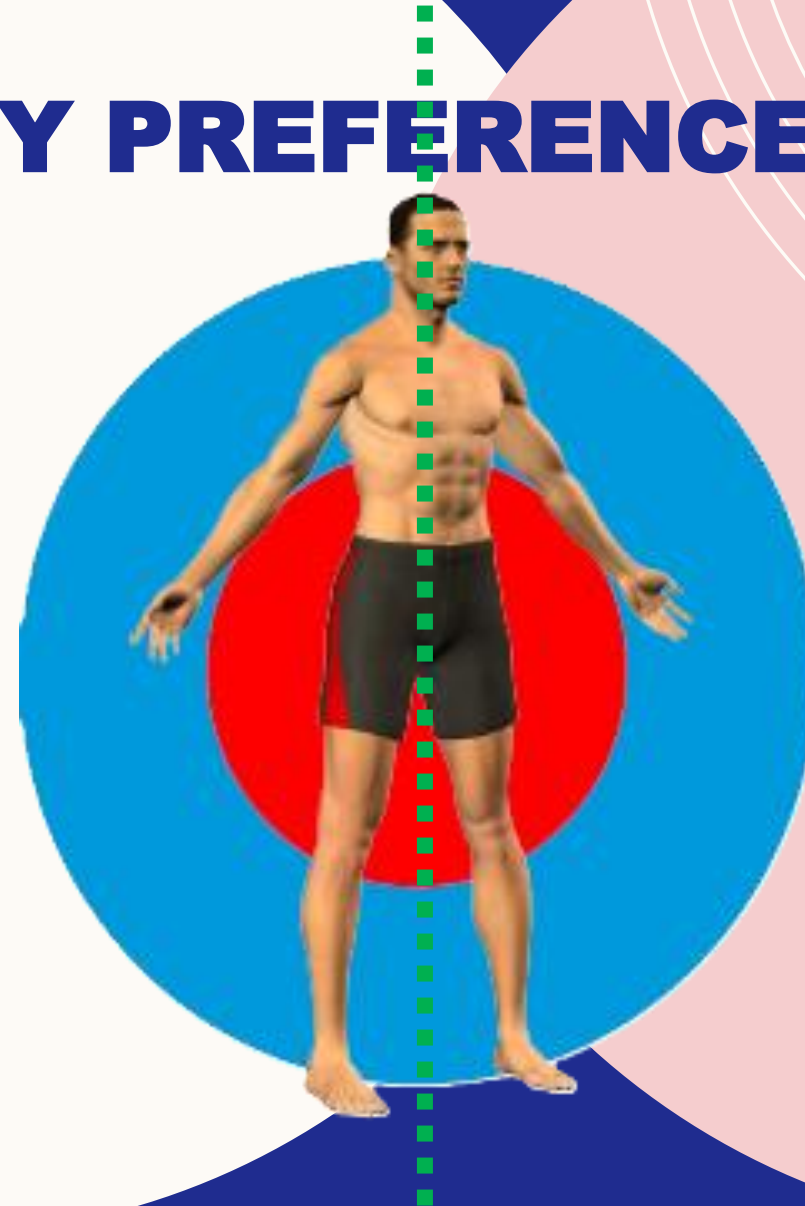
STABILITY MOTRICITY PREFERENCES

MOTRICITY LARGE

MOTRICITY AXIAL

**LARGE / PLAYERS LIKE MOVE THEIR MASS
AWAY FROM BODY AXE**

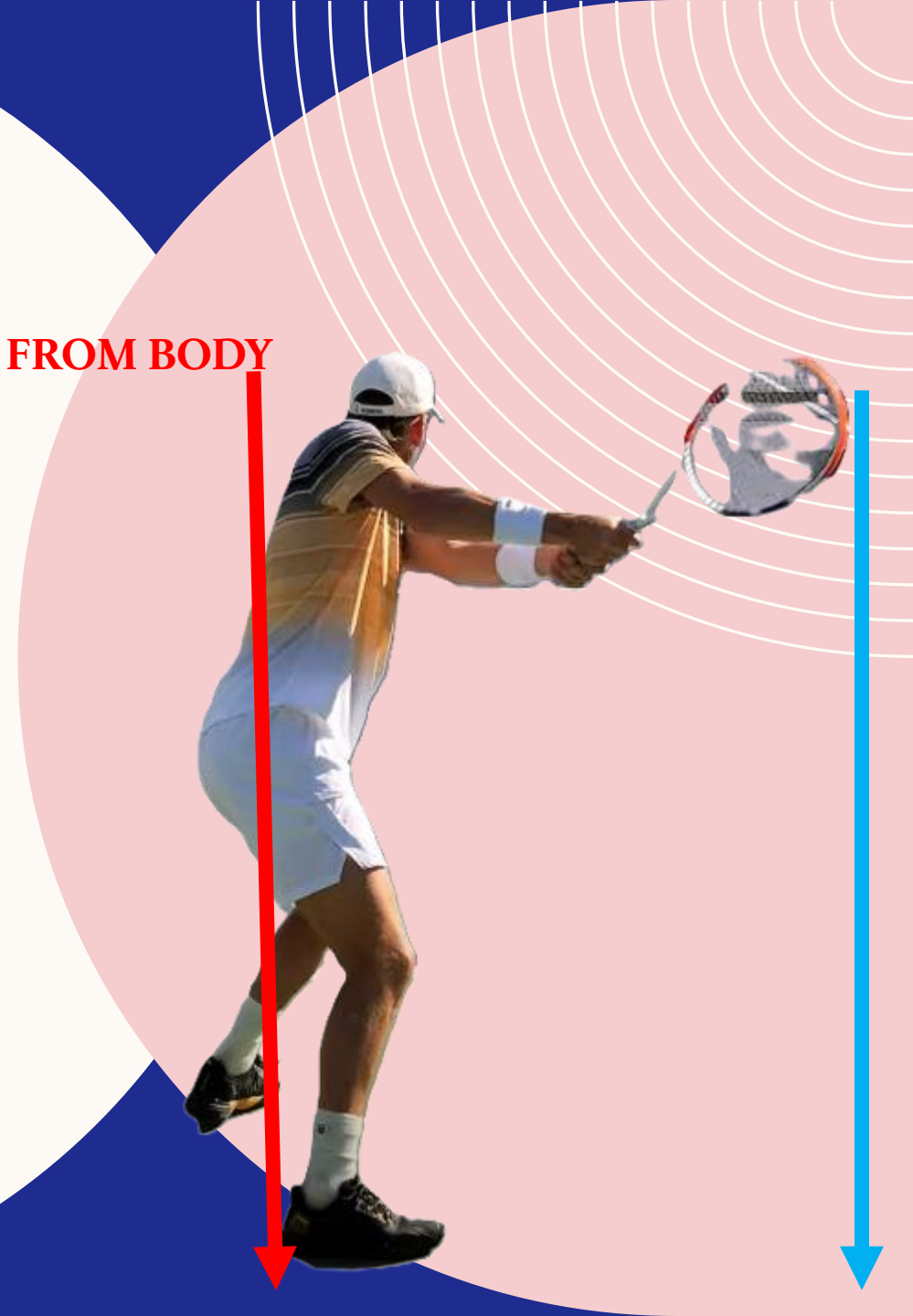
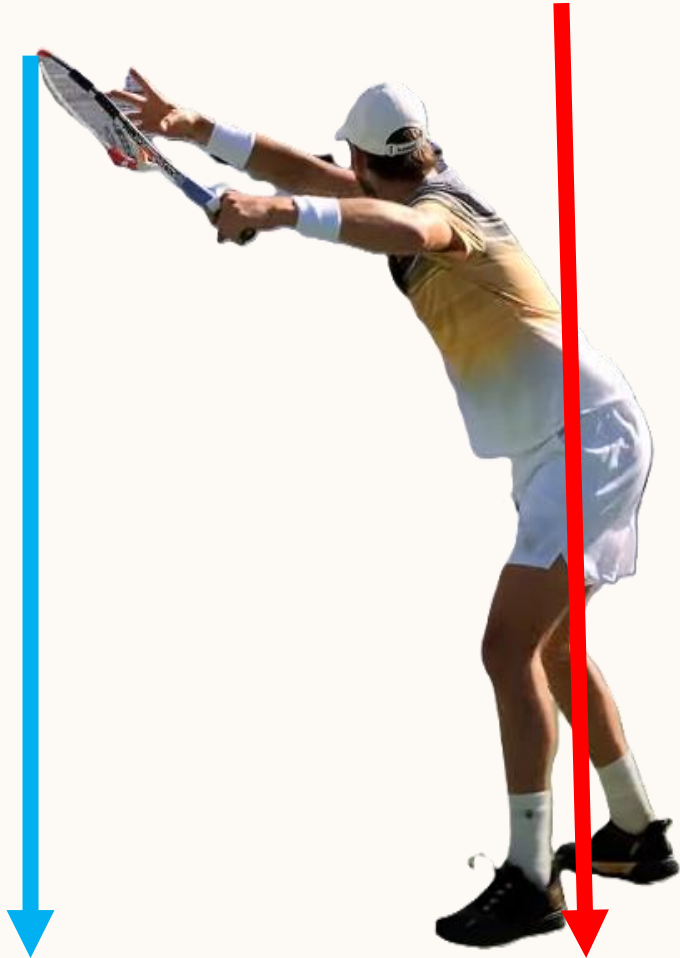
**AXIAL/ PLAYERS LIKE TO KEEP THEIR MASS
NEAR THE BODY AXE**





TENNIS PLAYER WITH LARGE MOTRICITY PREFERENCE

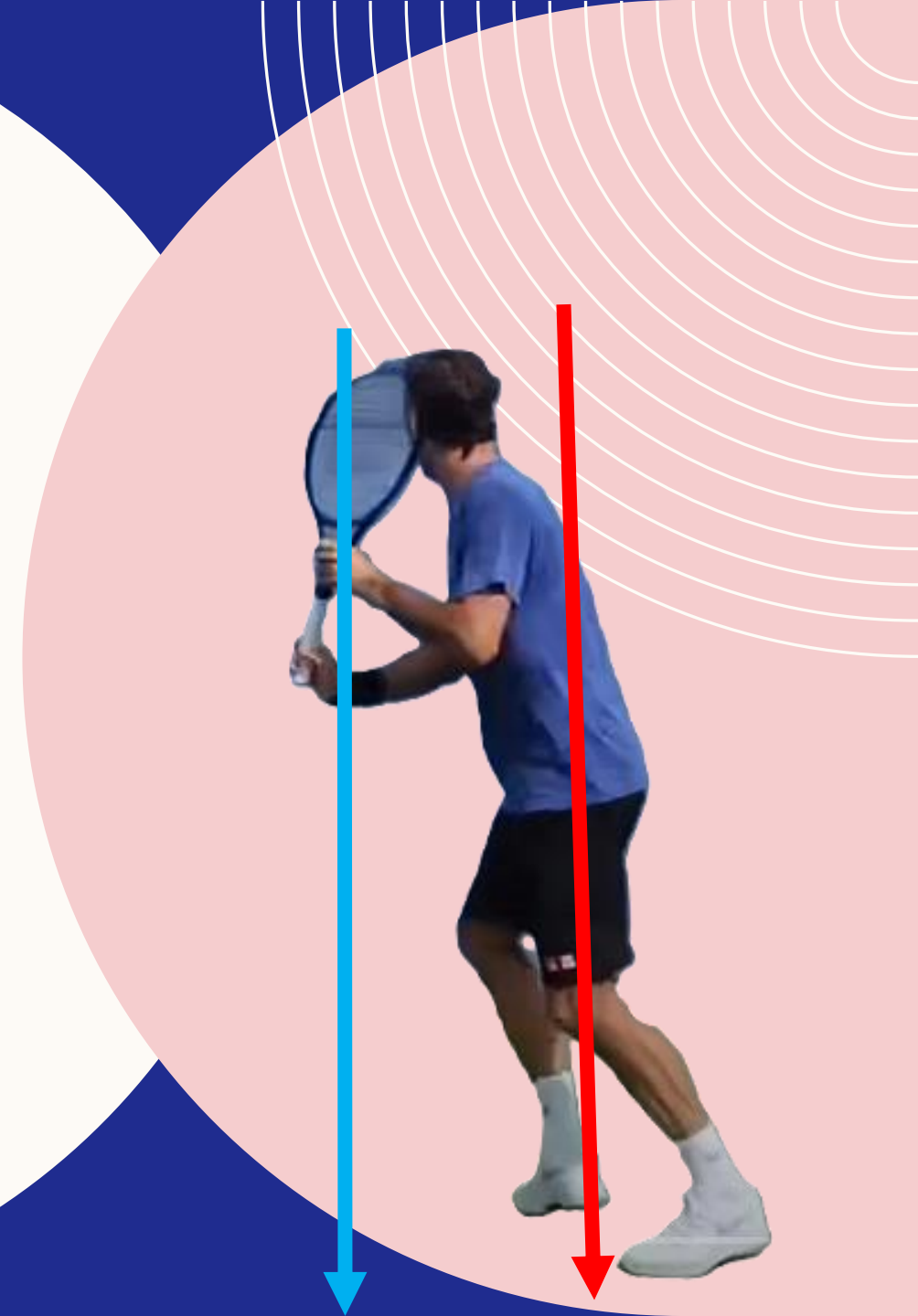
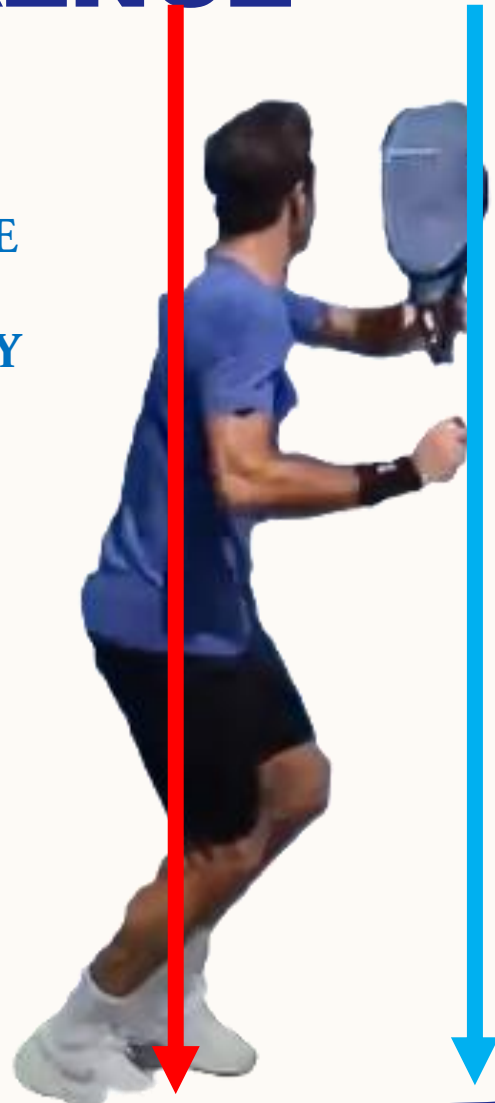
PLAYERS LIKE KEEP ELBOWS HORIZONTAL AND AWAY FROM BODY
LIKE TO MOVE SIDE TO SIDE





PLAYERS WITH AN AXIAL MOTRICITY PREFERENCE

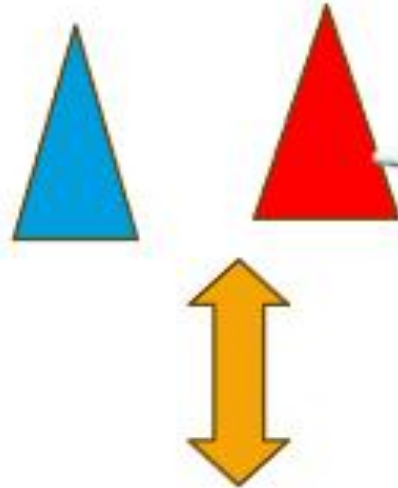
THEY QUICK TO MOVE UP AND BACK IN AND OUT THE BASELINE
KEEP ELBOWS VERTICAL AND CLOSED TO THE BODY



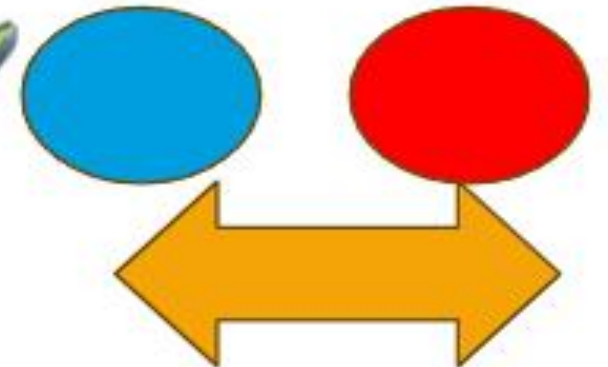


INDIVIDUAL TARGET/ TRAINING ZONE

USE VERTICAL
TARGET FOR PLAYER
WITH VERTICAL MOTRICITY



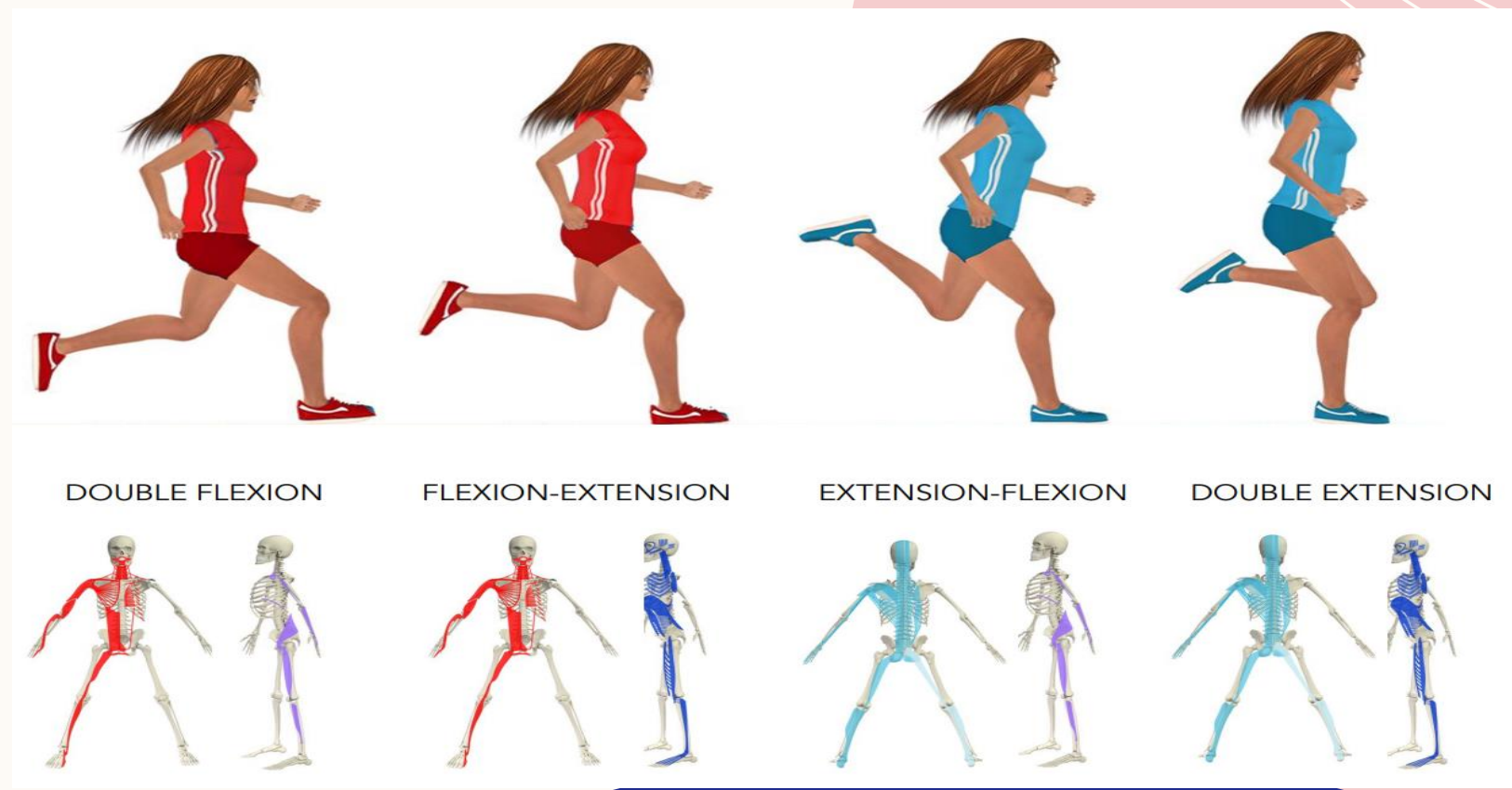
• USE HORIZONTAL
TARGET ZONE FOR
PLAYER WITH
LARGE MOTRICITY





BREATHING PREFERENCES

- BREATHING PREFERENCES ARE LINKED TO DIFFERENTS MUSCLES CHAINS
- AND BREATHING IN OR BREATHING OUT PREFERENCE HELP TO COORDONNATE AND STABILISE THE UPPER BODY TRUNK ROTATION AND
- SHOTS



WOMENS PLAYERS WITH BREATH OUT PREFERENCE



WOMENS PLAYERS WITH BREATH IN PREFERENCE





MENS PLAYERS BREATHING PREFERENCE $\frac{3}{4}$ AIR IN LOUNGS OR OUT LUNGS WHEN HIT THE BALL

MORE STABILITY
WITH AIR
IN THE LUNGS



BREATHIN IN PLAYER

MORE STABILITY
WITH NO AIR
IN THE LUNGS

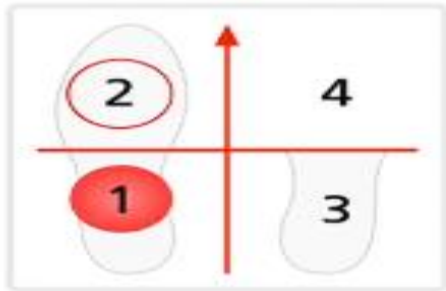


BREATHIN OUT PLAYER

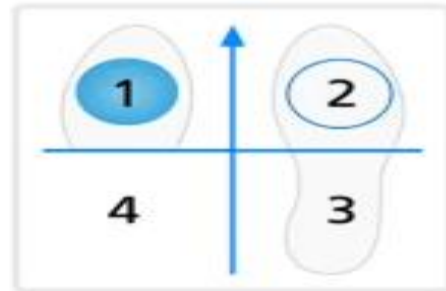
MOTRICITY PREFERENCES LARGE OR AXIAL



Expire + axial = 2 devant // Expire + large = 2 derrière // Inspire + axial = 2 derrière // Inspire + large = 2 devant

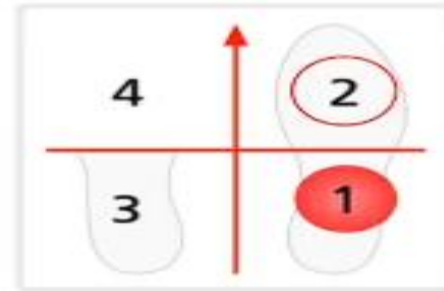


MOTRICITE AXIALE



AERIEN EXPIRE

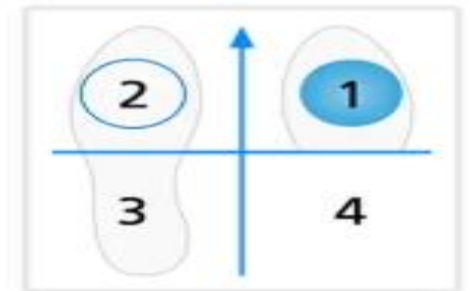
À gauche



MOTRICITE LARGE

TERRIEN INSPIRE

2/3 à droite



AERIEN INSPIRE

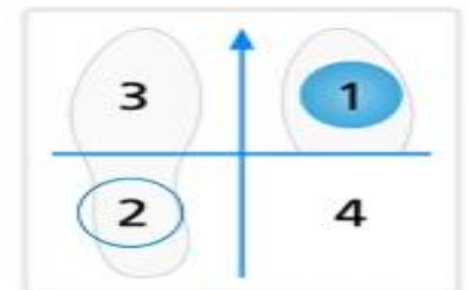
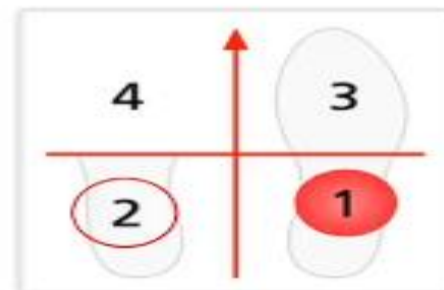
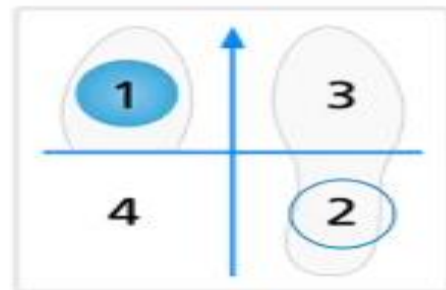
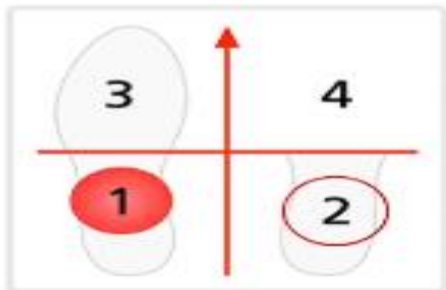
À droite

TERRIEN EXPIRE

2/3 à gauche

MOTRICITE LARGE

MOTRICITE AXIALE

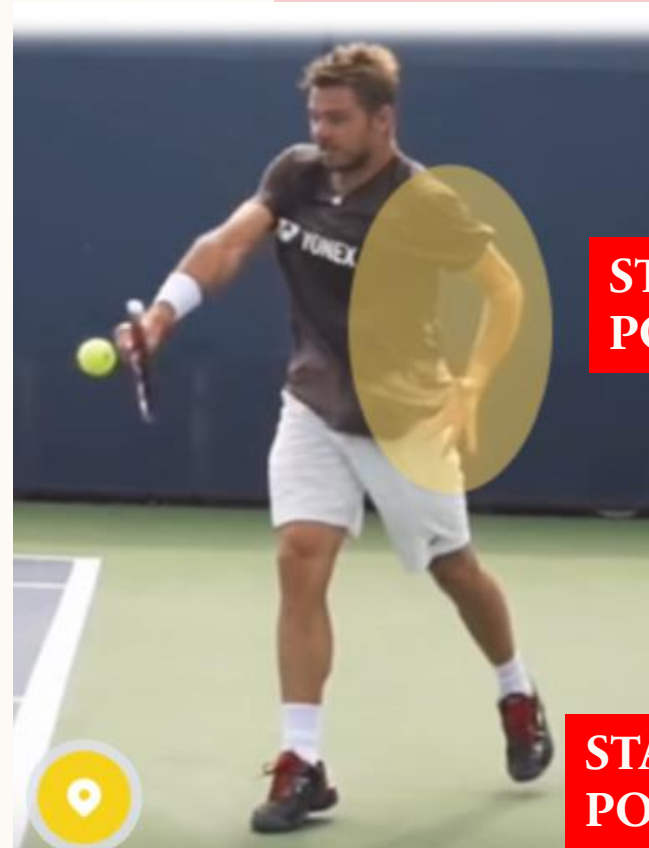


STABILITY POINTS HELP STABILISE THE TRUNK ROTATION TO AVOID OVER-ROTATION DURING THE SWING



STABILITY
POINT

STABILITY
POINT



STABILITY
POINT

STABILITY
POINT



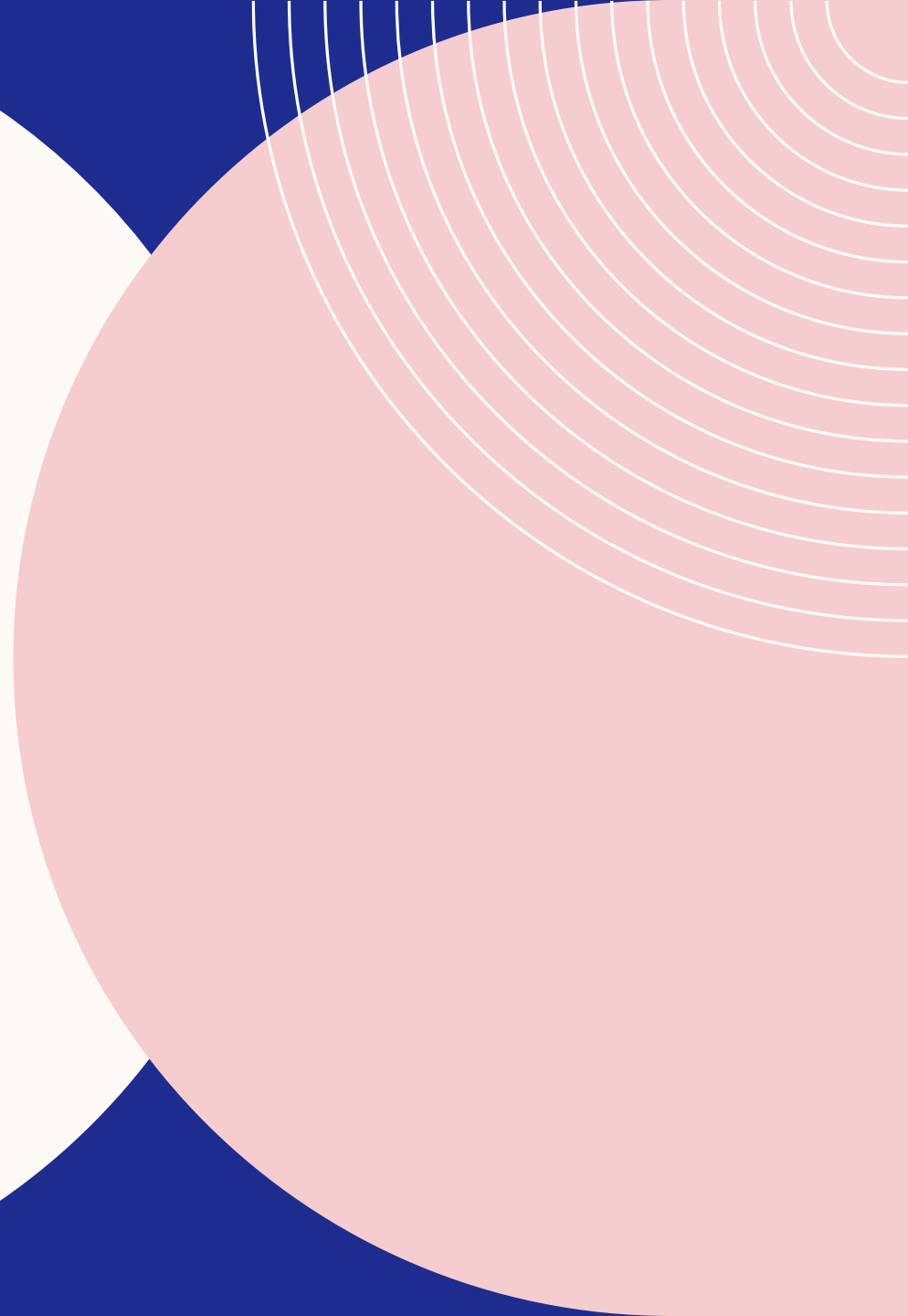
**STABILITY
POINT**



**STABILITY
POINT**



ANCHOR



THANK YOU AND QUESTION TIME



mytenniscloud