

## Swingle Training Protocols

Training protocol	Ratio or Amplitude	EO/EC/CC	1 or 2 Sites
<b>Cz Findings</b>			
a). Theta:Beta ratio below 2.20 during EO and during cognitive challenge, (CC)	Theta/Beta Ratio	EO/EC	1
b), % Beta increase under task <15%	Theta/Beta Ratio	CC	1
c).Increase in Alpha band amplitude should be at least 30 percent EC relative to EO;	Alpha Amplitude	EC	1 or 2, Cz and posterior
d). Alpha should block rapidly (i.e., drop to EO level quickly) so the post EC epoch should be close to the pre EC epoch.	Should relate to Theta/Beta and Amplitude	EO/EC	1 or 2
e). TA the sum of amplitudes of Theta, Alpha and Beta bands should be below 60.	Amplitude Squash, (Theta/Alpha/Alpha)	EO/EC	1
f). Theta/SMR EC** If the ratio is high, train at C4	Theta/SMR Ratio	EO/EC	1
g). Peak Alpha should be 9.5 or higher	Alpha Amplitude	EC	1 or 2, Cz and posterior
<b>O1 Findings</b>			
a). Theta:Beta ratio between 1.80 and 2.20 both EO and EC	Theta/Beta Ratio	EO/EC	1
b). Alpha amplitude increase at least 50 percent EC over EO	Alpha Amplitude	EC	1 or 2, Cz and posterior
c). Return of Alpha amplitude to EO level within one epoch i.e., post EC epoch is within 10 percent of the pre EC epoch.	Should relate to Theta/Beta and Amplitude	EO/EC	1 or 2
d). TA below 60.	Amplitude Squash, (Theta/Alpha/Alpha)	EO/EC	1
e). Peak Alpha should be 9.5 or higher	Alpha Amplitude	EC	1 or 2, Cz and posterior
<b>F3/F4 Findings</b>			
a). Theta:Beta ratio is below 2.00	Theta/Beta Ratio	EC	1
b). The difference between F3 and F4 in any	Coherence training or	EC	2

band should be less than 10 percent.	ratio's of Alpha/Theta and/or Beta		
c). Check % difference between F3 Theta/Beta and F4 Theta /Beta	Theta/Beta Ratio	EC	2
d). Theta/Alpha ratio is between 1.25 and 1.75	Theta/Alpha Ratio	EC	1 or 2
e). The TA is below 60.	Amplitude Squash, (Theta/Alpha/Alpha)	EC	1 or 2
<b>Fz Findings</b>			
a). Delta below 9.0	Delta Amplitude		
b). The ratio of 28-40Hz amplitude to Beta, (16 – 25), amplitude between .45 and .55.	HiBeta/Beta Ratio	EC	1
c). The sum 28 – 40 & Beta should be below 15	Beta Amplitude	EC	1
d). The ratio of Lo-Alpha (8 – 9), to Hi-Alpha (11 – 12), below 1.50.	LoAlpha to HiAlpha Ratio	EC	1

## Summary

No.	Protocol
1).	Theta to Beta Ratio
2).	Theta to Alpha Ratio
3).	HiBeta to Beta Ratio
4).	LoAlpha to HiAlpha Ratio
5).	Theta to SMR Ratio
6).	Coherence training or ratio's of a). F3 to F4 Alpha, b). F3 to F4 Theta and c). F3 to F4 Beta
7).	Amplitude Squash, (i.e. squash everything, Theta/Alpha/Beta) (Medium Importance)
8).	Delta Amplitude, (Low importance)
9).	Alpha Amplitude
10).	Beta Amplitude