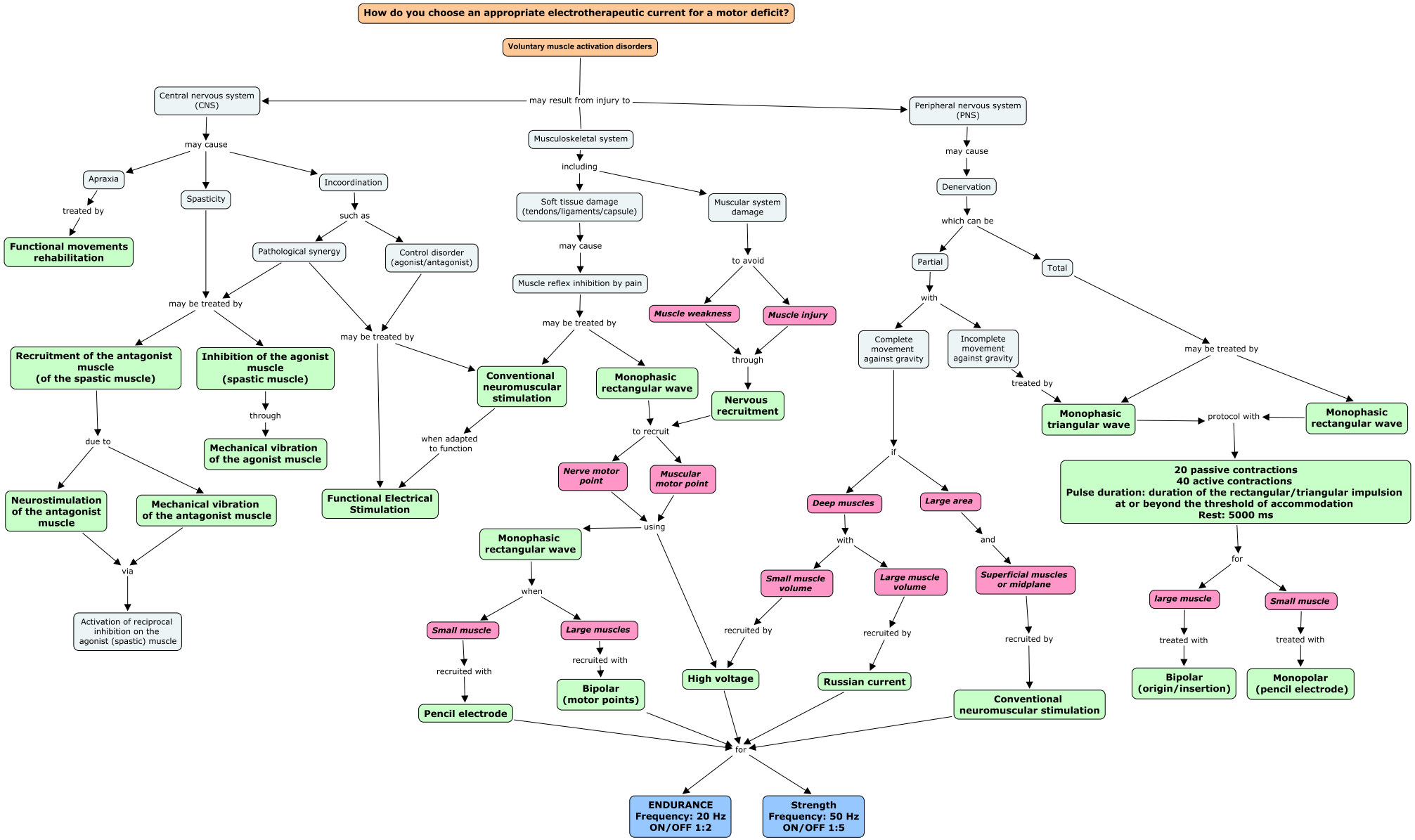
How do you choose an appropriate electrotherapeutic current for a motor deficit?
Voluntary muscle activation disorders
may result from injury to
Central nervous system (CNS)
may cause
Apraxia
treated by
Functional movements rehabilitation
Spasticity
may be treated by
Recruitment of the antagonist muscle (of the spastic muscle)
due to
Neurostimulation of the antagonist muscle
Mechanical vibration of the antagonist muscle
via
Activation of reciprocal inhibition on the agonist (spastic) muscle
Inhibition of the agonist muscle (spastic muscle)
through
Mechanical vibration of the agonist muscle
Incoordination
such as
Pathological synergy
Control disorder (agonist/antagonist)
may be treated by
Functional Electrical Stimulation
Musculoskeletal system
including
Soft tissue damage (tendons/ligaments/capsule)
may cause
Muscle reflex inhibition by pain
may be treated by
Conventional neuromuscular stimulation
when adapted to function
Monophasic rectangular wave
to recruit
Nerve motor point
Muscular motor point
using
Monophasic rectangular wave
when
Small muscle
recruited with
Pencil electrode
Large muscles
recruited with
Bipolar (motor points)
Muscular system damage
to avoid
Muscle weakness
Muscle injury
through
Nervous recruitment
High voltage
Peripheral nervous system (PNS)
may cause
Denervation
which can be
Partial
with
Complete movement against gravity
Incomplete movement against gravity
treated by
Monophasic triangular wave
if
Deep muscles
with
Small muscle volume
recruited by
Large muscle volume
recruited by
Russian current
Large area
and
Superficial muscles or midplane
recruited by
Conventional neuromuscular stimulation
Total
may be treated by
Monophasic triangular wave
protocol with
Monophasic rectangular wave
20 passive contractions
40 active contractions
Pulse duration: duration of the rectangular/triangular impulsion at or beyond the threshold of accommodation
Rest: 5000 ms
for
large muscle
treated with
Bipolar (origin/insertion)
Small muscle
treated with
Monopolar (pencil electrode)
for
ENDURANCE
Frequency: 20 Hz
ON/OFF 1:2
Strength
Frequency: 50 Hz
ON/OFF 1:5