
AMPLITUDE TRAINING

PROGRAM OBJECTIVES:

01 In 15 minutes, Participants will independently identify groups of symptoms often referred to as Parkinsonisms.

02 In 60 minutes, Participants will independently memorize 1 focused verbal cue used by Amplitude Training Practitioners.

03 In 120 minutes, Participants will independently demonstrate two exercises used by Amplitude Training Practitioners to promote amplitude and velocity of movement for clients affected by Parkinsonisms.

PARKINSONISMS

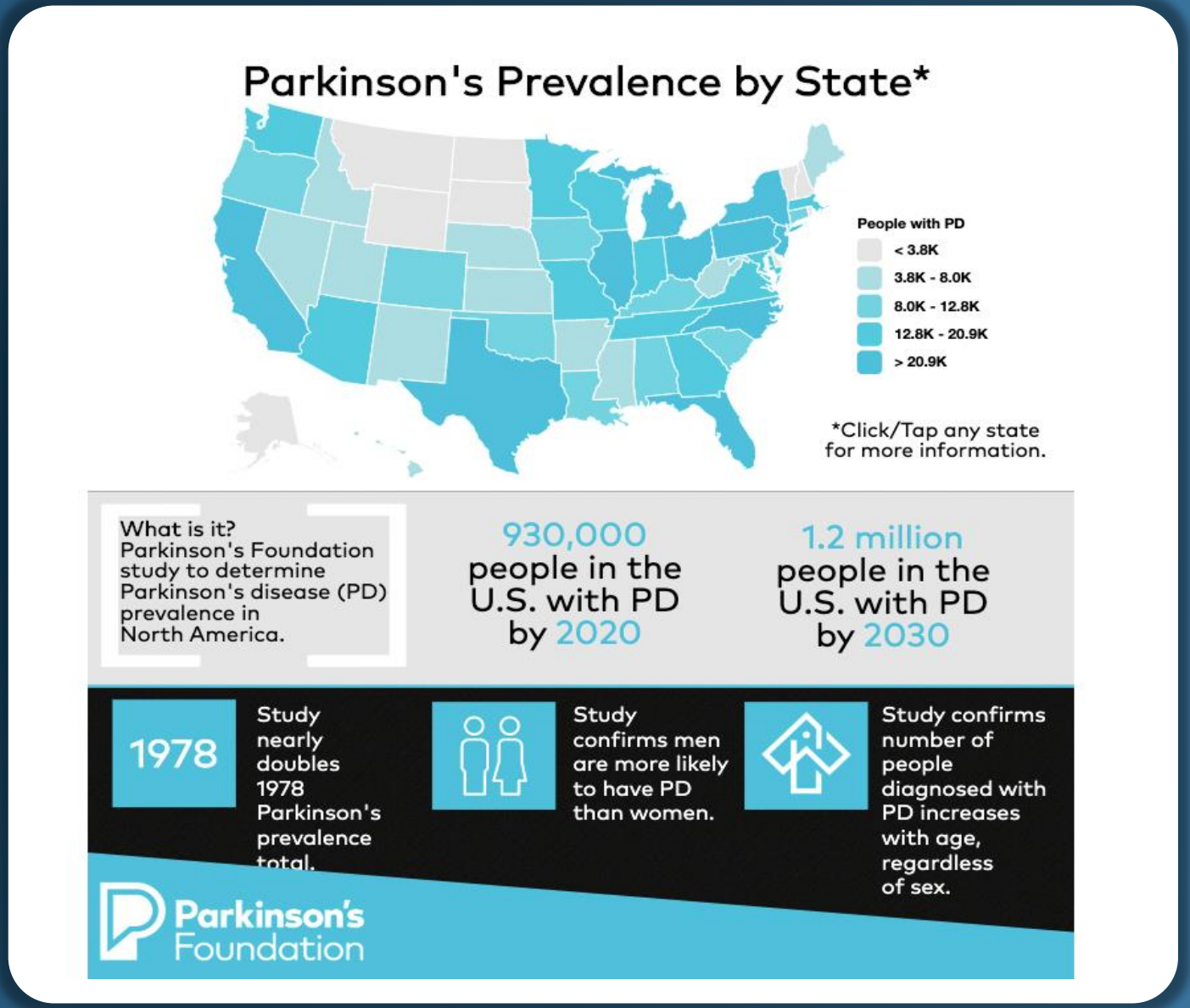
- Prominent bradykinesia
- Degeneration of the dopaminergic system
- Extrapyramidal signs and symptoms
  - dyskinesias,
  - impaired posture
  - speech changes
  - poor coordination.
- Loss of automatic movements
  - blinking, smiling, arm swing

MECHANISMS

- Parkinson's Disease (PD)
- Medications
- Traumatic brain injury and stroke
- Certain neurodegenerative disorders
- Exposure to toxins
- Certain brain lesions
- Metabolic disorders

PARKINSON'S DISEASE

- Parkinson's symptoms worsen over time.
- 50 percent more men than women.
- Primary Risk factor is age.
- Most develop at age 60,
- Early onset in about 5 to 10 percent of diagnoses before the age of 50.
- Second most common neurological disorders to affect older adults after Alzheimer's Disease.



MEDICATION-INDUCED PARKINSONISMS

- **Haloperidol**- Schizophrenia, Tourette's disorder.
- **Metoclopramide** - Diabetic gastroparesis, gastric esophageal reflux disease.
- **Phenothiazines** for vomiting and nausea following chemotherapy.

TRAUMATIC BRAIN INJURY

- Adults who had experienced a head injury with loss on consciousness up to 20 years previous had a 3.5x greater likelihood of having PD.

OTHER NEURODEGENERATIVE DISORDERS

- Lewy Body Dementia
  - Clusters of intracellular proteins, called Lewy bodies, form protein deposits around cortical neurons in the brain
  - Symptoms overlap with Parkinson's disease & Alzheimer's disease.
    - ✓ Bradykinesia, rigidity, tremor, and cognitive decline.
  - Visual hallucinations.

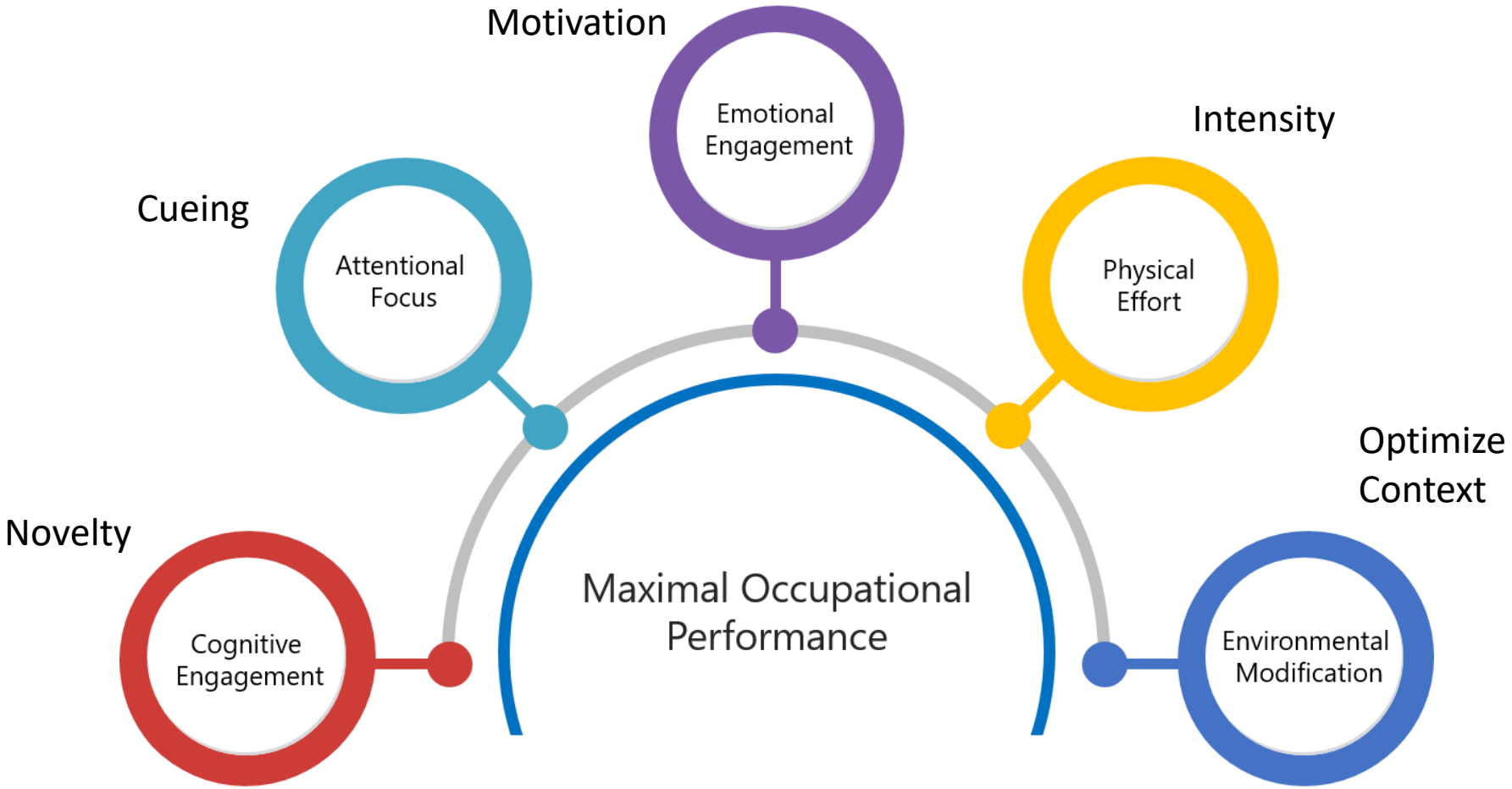
- Progressive Supranuclear Palsy
  - PSP looks very similar to PD.
  - Nerves that control eye movements may be destroyed.

THEORY BEHIND AMPLITUDE TRAINING?

Neuroplasticity.

- Ability of the brain to change continuously throughout an individual's life.
  - Brain activity associated with a given function can be transferred to a different location.
  - Proportions of grey matter can change, and
  - Synapses may strengthen or weaken over time.

NEUROPLASTIC STIMULATION



AMPLITUDE TRAINING SPECIFICS:

- Completed in Standing, Sitting, Prone, Supine, Quadruped.
- Combines:
  - high intensity,
  - multi-directional and
  - repetitive movements
- Exercise and functional task training contributes to behavioral recovery and promotes neurobiological sparing.

FOCUS

- The SIZE of movement as a global motor control parameter.
- Train amplitude across 3 domains-
  - 1. disciplines
  - 2. tasks, and
  - 3. motor systems
- Goal:
  - increase endurance, balance, and functionality of everyday movements.

TYPES OF AMPLITUDE TREATMENTS

- LVST Lee Silverman Voice Training
- Originally a speech treatment protocol, LSVT LOUD,
- Was later expanded LSVT BIG.

LSVT BIG:

- Intensive,
- Standardized,
- Evidence-based,
- One-on-one treatment.
- Recalibrate movement.
- 7 movement exercises.
- 3 Positions (sitting/standing/prone).
- Cue: BIG
- Non-modifiable.
- 1:1 by certified PT's/OT's only.
- 4x/week for 4 weeks.
- Daily homework and carryover exercises.

POST TREATMENT

- Once a day for 10–15 minutes.
- Periodic “tune-up” sessions.
- May be most effective in early or middle stages of the condition.

THE BERLIN BIG STUDY.

Compared effectiveness of 3 exercise programs in people with mild to moderate Parkinson's disease.

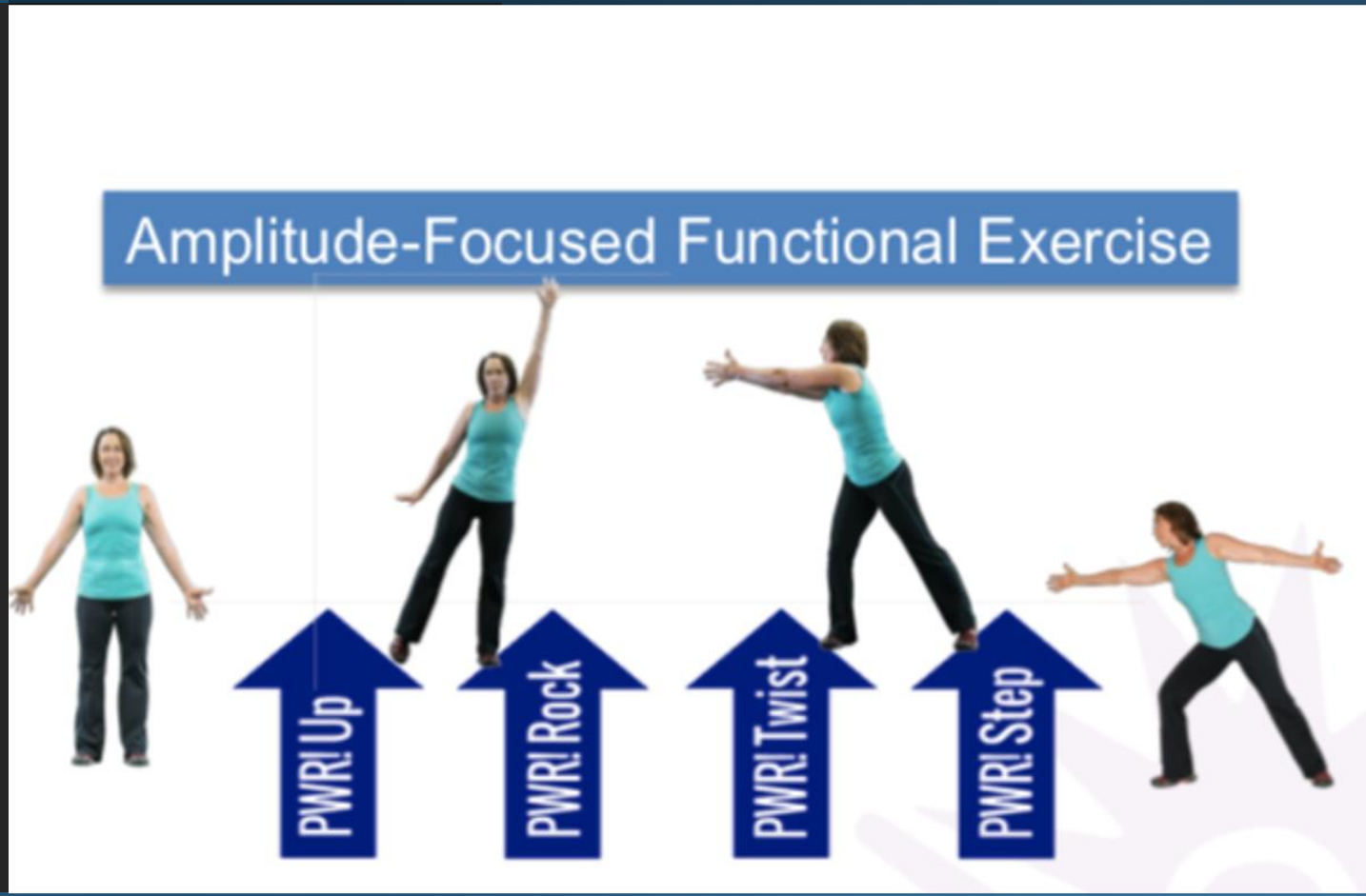
1. 1:1 LSVT BIG training,
2. Nordic walking training, and
3. Domestic unsupervised exercises.

Found significant improvement in:

- Unified Parkinson’s Disease Rating Scale (UPDRS)
- 10-m Timed Up and Go Test

PWR
Parkinson's Wellness Recovery

- Amplitude training as a framework for research-based programming.
- 4 Foundational movements – (The Basic 4).
- 5 Positions.
- Cue: Power.
- ALL levels of disease severity.
- Not standardized.



- Therapists or fitness professionals.
- 1:1 or group settings.
- Adaptable

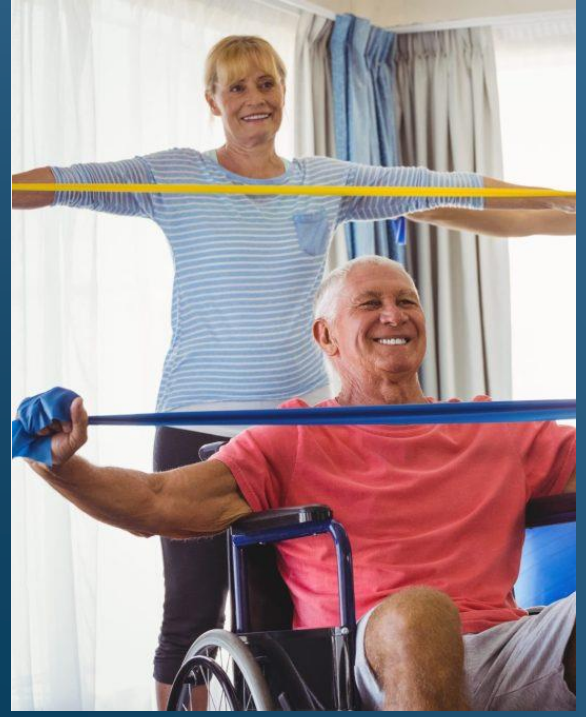
3 PRIMARY PRINCIPLES

- Optimize Brain Health
- Optimize Brain Repair and Adaptation
- Optimize Physical Capacity

OPTIMIZING BRAIN HEALTH

- Progressive Aerobic Training.
  - 150 minutes of Aerobic exercise a week.
  - New blood vessels in the brain.
  - Oxygenates the brain.
  - Manage stress
  - Reduce depression
  - Enhance sleep

- Parameters
  - 56-61% Heart Rate Max,
    - ✓ 220 – age = HRM
  - Rate of Perceived Exertion, 4 or 5 out of 10.



- Aerobic exercise metabolically prepares the brain to work.
- Promotes brain/muscle interactions.
- Turns on attentional/working memory systems and Increases motor output.

OPTIMIZE BRAIN REPAIR AND ADAPTATION

- Amplitude-Focused Functional Exercise.
- Specific skill learning.
  - Long term behavioral changes.

OPTIMIZE PHYSICAL CAPACITY

- Promote exercise,
- Lifestyle,
- Sleep,
- Stress management,
- Client specific nutrition.

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Sitting Basic 1

Posture and alignment against gravity.

Sitting
Basic 2

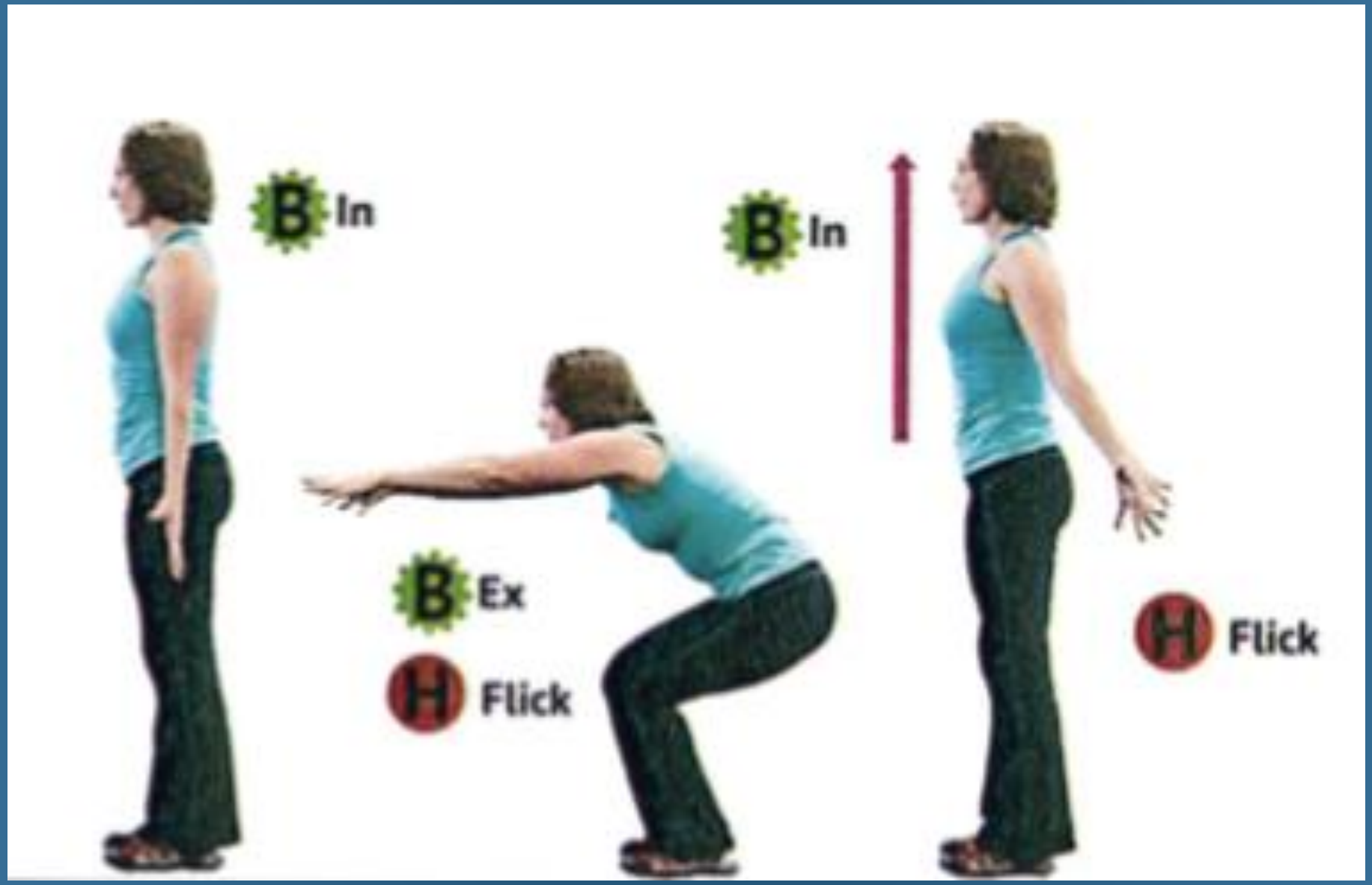
Sitting Basic 3

Don’t forget the leg.

Sitting Basic 4

Rock forward with each step.

Standing Basic 1



Standing Basic 2

Standing Basic 3

Standing Basic 4

All 4’s Basic 1

PWR UP

All 4’s Basic 2

PWR Rock

All 4’s Basic 3

PWR Twist

All 4's Basic 4

PWR Step

Supine Basic 1

Hips up, Chest up.

Supine Basic 2

Supine Basic 3

Supine Basic 4

Prone Basic 1

Prone Basic 2

Prone Basic 3

Prone Basic 4