NEUROLOGICAL + MUSCULOSKELETAL ADAPTATIONS TO TRAINING

WHAT WE’LL COVER

1. WHAT & WHY
   a. What are the differences between training for neurological vs. musculoskeletal adaptation? How can this help you as a Thinking Athlete?

2. TRAINING CONCEPTS
   a. Program design concepts for brain bias and brawn bias within the Functional Bodybuilding method

3. APPLICATION
   a. Example training sessions for brain and brawn bias - samples from the Persist Classic and Functional Body Composition tracks

4. NOURISHMENT
   a. Case studies for how to eat when using these different training approaches.

WHAT AND WHY?

WHAT IS BRAIN AND BRAWN TRAINING:

- Training is always a neuromuscular combination of stimulus + adaptations
- When you train, both your nervous system (brain) and muscles (brawn) are stressed and need to adapt.
- At different stages of training development, you will need to bias one more than the other to achieve different outcomes.
LOOK GOOD MOVE WELL WITH BRAIN + BRAWN:

- Brain and brawn overlap, and you can have the best of both - especially with FBB.
- The further you move toward one on the spectrum, the more you move away from the other.
- Understanding the difference and what each look like in training will help you:
  - avoid injury and overtraining
  - align your program more closely to your goals
  - work through plateaus
  - achieve goals more quickly

IS IT TIME TO BIAS YOUR BRAIN?: Examples of neurological adaptation

- LEARNING TO WALK
- BEGINNER GAINS
- OLY LIFTING VS. BODYBUILDING
- COMPLEX SKILLS WHEN STRENGTH IS SUFFICIENT

BRAIN + BRAWN DIFFERENCES:
SEEING PROGRESS BROADLY OVER TIME

- MOVEWELL
  - Nervous system
  - Upgrade neuron signaling skills
  - Motor control
  - High threshold motor units
  - Challenge complexity

- LOOK GOOD
  - Musculoskeletal system
  - Hypertrophy
  - Structure
  - Soft tissues
  - Musculature & shaping
  - Lower or moderate complexity movements
TRAINING CONCEPTS

BRAWN - PHYSIQUE BIAS
Training concepts to help you Look Good:

- Focus on maximal muscle contractions across a broad range of reps and time under tension.
- Look for mechanically advantageous positions to stress local muscle groups.
- Overload and volume stimulate soft tissue changes at both the connective tissue and muscle tissue levels.
- As seen in Persist's new Functional Body Composition track.

BRAWN - ATHLETICISM BIAS:

- Time under tension enhances movement quality and motor control.
- Positional work enhances strength in specific ranges of motion.
- Movement complexity is challenged to encourage brain adaptations and improve skills.
- As seen in Persist Classic track.
- In the Persist Minimalist track we work on both Brain and Brawn as effectively as possible with minimal equipment.

NOTES:
TRAINING EXAMPLES:

BRAIN BIAS WORKOUT:

Every 60 sec x 10 sets
Segment Clean Deadlift
Power Clean

Front Squat; 00X1; 8,8,8,8; rest 2:00-2:30 between sets

2 Hang Muscle Snatch Above Knee
2 Hang Muscle Snatch Below Knee
rest 30-45 sec x 8 sets

3min AMRAP
250/200m Row
3 Bar Muscle Ups
6 Strict HSPU
*in remaining time complete as many:
Alt DB TGU @ 53/35# reps as possible
-2 min rest x 3 sets-

BRAWN BIAS WORKOUT:

3 Sets
1. Back Rack Drop Lunge; 20X0 3-4/leg; rest 30sec
2. Death March 20X0; 10-12 Steps; rest 30sec
3. Hand Supported Suitcase Rear Foot Elevated Split Squat; 10X0 x 6-8/leg; rest 2mins

3 Sets
1. 8-10 Parallette Hammer Grip Push Ups 20X0; rest 15sec
2. 30sec Feet Elevated Ring Plank; rest 15sec
3. 12 Mixed Grip Barbell Curl 20X0 (switch grip half way); rest 60sec

EMOM x 8mins
KB Horn Curl x 5
KB Horn Pallof Press x 5
KB Hip to Halo x 5/side
3 Sets
1. Half-Kneeling Barbell Press; 21x1; 5-6 reps/knee; rest 60sec
2. Hanging Oblique Raises; 2010 x 12/side; rest 60sec
3. Kettlebell Horn Curls; 2010; 12-14 reps; rest 60sec

WHEN IT IS TIME TO SHIFT BIAS

FUN & FULFILLMENT:
- What gets you excited is usually the best approach.
- Feeling stale? A shift can inject new enthusiasm.
- Consider changing at different times of the year - a time for PUMP and a time to PERFORM.

EFFICACY:
- Diminishing returns from the same training over time.
- Physical plateau in strength or skill, or mental burnout.
- You may need a break even with a periodized program like Persist Classic.

INJURY AND FATIGUE:
- Too long in one approach may spell disaster depending on your training age & history.
- Pull back for a time when you have pushed past the threshold for too long.
- Keep the same thread of training with a different track in Persist.

NOTES:
NOURISHMENT: BRAIN VS BRAWN:

BRAIN:

1. **PROTEIN**
   a. **Adequate** for recovery. Too much is hard on digestion & may detract from brain adaptation.

2. **CARBS**
   a. **Emphasize** for nervous system adaptations and to support recovery time from intensity and complexity in training.

3. **CALORIES**
   a. **Maintenance** - surplus or deficit may hinder performance and brain adaptations.

BRAWN:

1. **PROTEIN**
   a. **Emphasize** for positive nitrogen balance to handle breakdown & rebuilding of tissue.

2. **CARBS**
   a. **Adequate** for recovery and muscle growth.

3. **CALORIES**
   a. **Surplus or Deficit** - depending on whether you primarily want to gain mass or shed fat.
CASE STUDY: BETTY

STATS:

- 38 year old Female, 5'4"
- Current Body Weight - 145 lbs
- Current Body Fat - 24%
- Goal - Drop fat and change body composition and appearance

GUIDANCE:

- Activity = LOW
- Protein = MODERATE
- Carb Approach = LOW
- Calorie Target = CHALLENGE FAT LOSS
- Program = PERSIST FBC TRACK 5x/week

HIGHLIGHTS:

- Mostly sedentary outside of training.
- Aggressive caloric deficit with low carb will kickstart more dramatic change.
- Past experience with macro counting and training leads to confidence in taking on a more challenging goal.
- Aesthetic focused training aligns to her goals and works with her schedule.
- Moderate protein balances macros given a low carb approach.
- Low carb helps with her sugar cravings and pushes her toward more whole carb foods like fruits & veggies.
BETTY SAMPLE DAY OF EATING

MACRO & CALORIE PRESCRIPTION:

- Daily Expenditure - 1996 cals
- Target for Fat Loss Goal - 1497 cals
- (25% deficit from baseline)
- Protein - 120 grams
- Carb - 75 grams
- Fat - 80 grams
- Target is 3 Meals a Day

MEAL ONE: Breakfast - 9am
40g protein, 15g carbs, 30g fat

- 7oz Leg of Lamb
- 200g Broccoli
- 5ml Olive Oil
- 20ml Lemon Juice

MEAL TWO: Lunch - 1pm
40g protein, 15g carbs, 30g fat

- 6.5oz Organic Turkey 93/7 lean
- 100g Green Cabbage
- 6g Butter
- 100g Avocado

TRAINING 4PM

MEAL THREE: Dinner - 6pm
40g protein, 45g carbs, 20g fat

- 7 oz Ground Sirloin
- 200g Sweet Potato
- 75g Green Beans
CASE STUDY: JAMAL

STATS:

- 45 year old Male, 5’9”
- Current Body Weight - 170 lbs
- Current Body Fat - 14%
- Goal - Gain 3-5 lbs. muscle over time, get into low 10s for body fat

GUIDANCE:

- Activity = MODERATE
- Protein = HIGH
- Carb Approach = CYCLE
- Calorie Target = LEAN MUSCLE GAIN
- Program = PERSIST FBC TRACK 6x/week (uses active recovery day)

HIGHLIGHTS:

- On his feet 4-6 hrs. every day outside of training.
- 10% caloric surplus while cycling carbs will get things moving without too much fat gain - bump up over time.
- Schedule allows for extra training day.
- Relatively low body fat to start means we can keep protein high.
- Has experience with counting and low carb - cycling carbs will also drive muscle growth on high intensity days.
JAMAL SAMPLE DAY OF EATING (HIGH CARB DAY)

MACRO & CALORIE PRESCRIPTION:

- Daily Expenditure - 2798 cals
- Target for Lean Muscle Gain - 3078 cals
- (10% surplus from baseline)
- Protein - 120 grams
- Carb - 150 grams low carb day / 345 grams high carb day
- Fat - 200 grams low carb day / 110 grams high carb day
- Target is 4 Meals a Day

MEAL ONE: Breakfast - 7am
42g protein, 50g carbs, 30g fat

- 40g Oatmeal
- ½ Banana
- 2 Scoops Whey Protein
- 50g Peanut Butter

TRAINING 10AM

MEAL TWO: Lunch - 12pm
42g protein, 150g carbs, 20g fat

- 200g Pasta
- 5 oz Chicken Breast
- ½ Cup Pasta Sauce
- 10g Butter

MEAL THREE: Second Lunch - 2pm
42g protein, 100g carbs, 30g fat

- 5 oz Ground Turkey
- 100g White Rice
- 170g Avocado

MEAL FOUR: Dinner - 8pm
42g protein, 45g carbs, 30g fat

- 6 oz New York Strip
- 200g Brussel Sprouts
CASE STUDY: LUIS

STATS:

- 28 year old Male, 5'11"
- Current Body Weight - 190 lbs
- Current Body Fat - 12%
- Goal - Improve performance, maintain body composition

GUIDANCE:

- Activity = HIGH
- Protein = HEAVY
- Carb Approach = HIGH
- Calorie Target = LEAN MUSCLE GAIN
- Program = PERSIST CLASSIC TRACK 6x/week

HIGHLIGHTS:

- Very active job and frequent training.
- 10% caloric surplus will benefit energy for performance and enhance recovery.
- Persist Classic track develops skills and periodizes training in a mixed modal setting with FBB foundations.
- High protein (1.1 g/lb bodyweight) ensures structural adaptations keep pace with training.
- High carb works for his energy needs esp. because he is at a low body fat already and doesn't need to gain or lose weight - he just wants to optimize performance.
LUIS SAMPLE DAY OF EATING (HIGH CARB DAY)
MACRO & CALORIE PRESCRIPTION:

- Daily Expenditure - 3470 cals
- Target for Lean Muscle Gain- 3817 cals
- (10% surplus from baseline)
- Protein - 210 grams / Carb - 430 grams / Fat - 140 grams
- Target is 5 Meals a Day

MEAL ONE: Breakfast - 10am
50g protein, 50g carbs, 40g fat

- 1.5 Servings Gluten Free Pancake Mix
- 1 Scoop Whey Protein Shake
- 2 Tbsp Nut Butter
- 1 Tbsp Butter

MEAL TWO: Lunch - 12pm
40g protein, 50g carbs, 40g fat

- 6 oz Chicken Thigh
- 150g Sweet Potato
- 50g Carrots
- 200g Avocado

TRAINING 2AM

MEAL THREE: 4pm
40g protein, 180g carbs, 20g fat

- 250g (dry weight) White Rice
- 1 Can Tuna
- 2 Tbsp Butter
- 4 Cups Spinach

MEAL FOUR: Dinner - 6:30pm
42g protein, 45g carbs, 30g fat

- 6 Whole Eggs
- 1.5 Tbsp Coconut Oil
- 1.5 Large Banana
MEAL FIVE: 9:00pm
40g protein, 50g carbs, 40g fat

- 6 oz Flank Steak
- 250g Potato
- 125g Broccoli
- 1.5 Tbsp Olive Oil

TAKEAWAYS

KNOW WHEN TO BIAS:
Training always involves both brain & brawn - but knowing when to bias one or the other will help you reach goals faster and enjoy training more.

TRAINING LOOKS DIFFERENT FOR EACH:
Understanding the types of movement selections, rep ranges, tempos, and designs that achieve different outcomes will help you select the right program for your needs.

ALIGN YOUR NUTRITION:
We each have highly individual needs for what type of nourishment will support our training - use these examples to help guide your choices.

PERSIST WITH FBB:
Functional Bodybuilding training encompasses the entire spectrum of brain and brawn to help you Look Good AND Move Well.

Now you can get both styles of training within one subscription program with Persist!

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