PLANNING OF DRY LAND TRAINING FOR JUNIOR AGE GROUP COMPETITIVE SWIMMERS

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Analysis of age group swimming-related publications and my own coaching experience shows that land-based training of young swimmers is not considered as much important as at the later stages of their development.

However, according to recommendations of sport scientists and coaches of the most successful swimming centres of Russia (and former USSR) and Eastern Europe extensive dry land training should be introduced at the earliest stages of a competitive swimmer development. They believe that strength training in the beginning of a swimming career is crucially important as it encourages mastering of swimming technique.

One of the leading experts Dr. A. Vorontsov states that strength training becomes a powerful way to simultaneously develop anaerobic abilities and to strengthen the muscles used during propulsion. For young swimmers a blend of strength and swimming training may be even more productive for rapid improvement than only swimming.

The aim of this presentation is to give age group coaches a general idea of using workloads, exercises and methods of land-based training of junior swimmers.

Coaches should plan dry land training for the whole season for the entire squad.

STAGE OF PRELIMINARY TRAINING (SWIMMERS OF UP TO 10 YEARS OLD)

Objectives

1. Comprehensive development and building up fitness of young swimmers.
2. Developing motor abilities such as strength, endurance, rapidity, flexibility and agility with an emphasis on rapidity, flexibility and agility.
3. Elimination of weaknesses in physical development such as stoop, flatfoot, limited joints movement, etc.
4. Tempering of young organism (importance of outdoor activities).
5. Creation of additional conditions for learning swimming technique.

Planning

Land based only sessions – throughout the year:
7-8 years olds – 2 x 45min sessions a week
9-10 years olds – 3 x 60min sessions a week

Dry land sessions combined with pool sessions (before pool session):
7-8 years olds – 2 x 30min sessions a week
9-10 years olds – 3 x 45min sessions a week

Recommended exercises for dry land training:

Callisthenics, light dumbbells, medicine ball, skipping rope, games and running.

1. Running Relays...
   - Running with a relay stick or medicine-ball
   - Jumping relay (one leg or two legs jumping)
   - Mix ... going out- run, coming home – “frog” jumps
   - Pair relay ... “wheel-barrow”

2. Leap-frog

3. “Centipede” run (Athletes form a chain file ... person standing behind bends over and holds front person on his/her waist ... then entire team runs on the Coach’s signal)

4. Soccer with 1kg Medicine Ball ... two teams of 4-6 people play on a soft ground ... compulsory rule ... everyone touches the ground by one hand

5. Jumping Relays...
   - One leg
   - Sideways
   - With Medicine Ball

6. Medicine Ball throwing

STAGE OF BASIC TRAINING (SWIMMERS OF 11-12 YEARS OLD)

Objectives
1. Comprehensive development and building up fitness of young swimmers.
2. Developing of the motor abilities with emphasis on strength, endurance and agility.
3. Tempering of young organism (importance of outdoor activities).
4. Creation of additional conditions for learning swimming technique.

Planning

Land based training is carried out regularly throughout the season. Dry land sessions can be held as much as 5 times of 60min a week or 6 times of 45min a week. Attention should be paid to the specific strength exercises, which do not exceed 30% of overall dry land training duration. It is essential that young athletes are taught to do one or two relaxation exercises after every strength exercise.

WEEK 1 – WEEK 9 (MESOCYCLE 1)

Monday-Wednesday-Friday

WARM-UP: Jogging with short spurts 8-10min

- Arms and forearms rotation
- Dash arms motion
- Vertical and horizontal arms swinging
- Trunk twisting
- Knee circular motions
- Knee circular motions with slow squatting
- Push-off stretch position
- From crouch to push-off
- Jumps
- Walking in squatting position
- Stretching

MAIN SECTION: Medicine Ball Exercises in pairs 20-25min

Note: Recommended weight of the medicine balls is from 2-4kg.

- Standing (or sitting) throw the ball from the chest with both arms – 20-40 times
- Standing (or sitting) throw the ball form the shoulder with one arm – 15-25 times with each arm
- Standing and holding the ball at the right hip, throw the ball with both arms through the right side.
- Repeat through left side ... 20-30 times through each side
- Standing and holding the ball in lowered arms, legs are wider than shoulders, throw the ball with straight arms from beneath – 20-30 times
- The same but throw the ball from the bend forward position
- Standing back to partner, throw the ball with both arms backward, paying attention on full arms extension at the final phase of the throw and relaxing arms after each throw – 15-25 times
- The same but throw the ball from the bend forward position – 15-25 times
- The same but throw the ball through each shoulder with body rotation
- Sitting back to partner in the bend forward position, and holding the ball in straight arms at the ankles, throw the ball backward with both straight arms and simultaneously unbend back (L-seat) –15-25 times
- Lying on back and holding the ball in straight arms over head, throw the ball with both straight arms from behind the head with simultaneous transition in to the sitting position. Then catch the ball with simultaneous transition in to the lying on back position – 15-30 times
- Parallel running with partner and throwing the ball to each other. Then swap sides – 50-100m
- Form a circle by group of 3-5 people. Throw over 1-3 balls in a circle for 2-4min

CONCLUSION: Game (basketball or handball) 10min

Tuesday-Thursday-Saturday

WARM-UP: Jogging 6-8min

Exercises in motion:

- Arms and forearms rotation
- Dash arms motion
- Vertical and horizontal arms swinging
- Push-off stretch position
• From crouch to push-off
• Jumps
• Walking in squatting position
• Stretching

MAIN SECTION: 25-30min

• Developing upper limbs strength:
  Push-Ups: 4-8 sets of 10-12 times
  Pull-Ups: 6-8 sets of 8-10 times
• Developing lower limbs strength:
  Squatting: 2-3 sets of 20-30 times
  “Starting Dive” jumps: 4-6 sets of 2-4 times
  Running relays

CONCLUSION: Game (basketball or soccer) 10min

WEEK 10 – WEEK 18 (MESOCYCLE 2)

Monday-Wednesday-Friday
WARM-UP: Jogging 6-8min
Exercises in motion:
• Arms and forearms rotation
• Dash arms motion
• Vertical and horizontal arms swinging
• Push-off stretch position
• From crouch to push-off
• Jumps
• Walking in squatting Position
• Stretching

MAIN SECTION: Strength Exercises 20-25min.
All exercises are of 16-18 sets of 15-25 times:
• Push Ups
• Pull Ups
• Chin Ups
• Sit Ups
• Squatting

CONCLUSION: Game (basketball or handball) 10min

Tuesday-Thursday-Saturday
WARM-UP: Jogging with short spurts 8-10min
• Arms and forearms rotation
• Dash arms motion
• Vertical and horizontal arms swinging

• Trunk twisting
• Knee circular motions
• Knee circular motions with slow squatting
• Push-off stretch position
• From crouch to push-off
• Jumps
• Walking in squatting position
• Stretching

MAIN SECTION: Sliding Trolley Machine or Swimming Bench 25-30min
Training regime: 20 sets of 45-50sec.
• Freestyle/Butterfly/Breaststroke Pull
• Backstroke Pull
• Breaststroke Kick
• Kick on Back
• Kick on Front

If above-mentioned equipment is not available then stretch cord can be used.

Important Note:

Stretch Cord exercises are outwardly similar to swimming stroke. However, they are different in neural-muscular structure from the arm stroke mechanics because of different distribution of exertions in the stroke cycle and non-coincidence of relaxation phase. That is why numerous repeats may cause negative changes in the stroke technique.

Thus, Stretch Cord exercises should be carried out using the repetition training method in maximum pace: 30-60sec workload, 15-30sec rest.

Two types of stretch cords should be used:
1. “Heavy” – with tension of 20-25kg
2. “Light” – with tension of 4-12kg

Teaching Point:

Swimmers should keep their elbows up throughout the “stroke” and make a good push motion at the very end of the “stroke”.

• Freestyle, Butterfly, Breaststroke Pulling ...
  “Light” cord … standing in the bend forward position or lying on a bench – 3 sets x 30-60 times
• Arm pull between the legs ... “Light” cord ... pull with both straight arms in the direction between legs – 3 sets x 30-60 times
• Arm pull outside the legs ... “Light” cord ... pull with both straight arms in the direction between legs – 3 sets x 30-60 times
• Side Pull ... “Heavy” cord ... standing face to stretch cord ... pull with both straight arms to the left side with simultaneous vigorous body rotation to the left ... repeat to the right side ... 2-3 sets x 20-30 times
• Upward Pull ... “Light” stretch cord ... standing face to stretch cord ... pull with both straight arms upward ... 3 sets x 25-50 times
• Pull To Chest ... “Heavy” stretch cord ... standing face to stretch cord ... pull with both upper arms to the chest bending elbows. Elbows positions: (1) Down; (2) Sideways; (3) Up ... 2-3 sets x 20-30 times
• Triceps extension ... “Heavy” stretch cord ... 2-3 sets x 20-30 times ... standing back to stretch cord with arms bent in the elbows ... pull with both upper arms upward
• Backstroke Pull ... “Light” stretch cord ... standing back to stretch cord – Arm pull ... 3 sets x 30-60 times
• Forward Pull ... “Light” stretch ... 3 sets x 25-50 times ... standing back to stretch cord, arms sideways ... pull with both straight arms forward
• Double Arm Backstroke Pull ... “Light” stretch cord ... sitting with arms over head; stretch cord is secured above ... pull from the top to the bottom as swimming breaststroke on back ... 3 sets x 25-50 times
• Breaststroke Kick (both technique and strength exercise) ... “Heavy” stretch cord ... lying on stomach face to stretch cord, with ends of stretch cord on feet, legs bent in the knees ... simulate breaststroke kick by extending and bending legs ... 3 sets x 25-50 times
• Arms Swinging ... “Heavy” stretch ... standing holding arms forward with cord in hands ... swing arms sideways ... 20-30 times

CONCLUSION: Special relaxation exercises 10min
This may include such exercises as tightening specific muscle group, holding them tight for 5sec, then relaxing.

WEEK 19 – WEEK 28 (MESOCYCLE 3)

(Same as Week 1 - Week 9)

WEEK 29 – WEEK 36 (MESOCYCLE 4)
Monday-Wednesday-Friday
WARM-UP: Jogging 8-10min
Exercises in motion:
• Arms and forearms rotation
• Dash arms motion
• Vertical and horizontal arms swinging
• Push-off stretch position
• From crouch to push-off
• Jumps
• Walking in squatting position
• Short sprints in form of relay
• Stretching

MAIN SECTION: Same as Tuesday-Thursday-Saturday during July-August

CONCLUSION: Game (basketball or handball) 10min

Tuesday-Thursday-Saturday
WARM-UP: Jogging 10-15min

MAIN SECTION: Conditioning Cross Training 30-35min
This is structured form of training when athletes alternate given exercises with running and walking in the following organised order:
• Slow pace running 3min
• Walking 2min
• Exercises in motion: Arms and forearms rotation ... Dash arms motion ... Vertical and horizontal arms swinging ... Push-off stretch position ... From crouch to push-off ... Jumps ... Walking in squatting position ... Stretching ... 5min
• Slow pace running 2min
• Walking 1min
• Push Ups: 3 sets of 8 times with 20-25 steps in between
• Walking 1min
• Undulating Arms Flexion/Extension – “Wave” ... during the exercise make undulating body motion ... 3 sets of 8 times with 15-20 steps in between
• Stretching and relaxation exercises in motion 2min
• Slow pace running 2min
• Walking 1min
• Jump Ups from deep squatting position ... 3 sets of 15 times with 30sec ... jogging in between
• “Wheel-barrow” swapping over partners continuously of 80-100 steps overall
• Stretching and relaxation exercises in motion 2min
• Slow pace running 3min

Timing of the program is done by the Coach.

CONCLUSION: Skipping rope exercises 5min

**WEEK 37 – WEEK 44 (MESOCYCLE 5)**
(Same as Week 10 – Week 18)

**WEEK 45 – WEEK 48 (MESOCYCLE 6)**
Monday-Wednesday-Friday
Same as Tuesday-Thursday-Saturday during Weeks 29-36.
**Tuesday-Thursday-Saturday**
Same as Monday-Wednesday-Friday during Weeks 1-9.

**WEEK 49 – WEEK 52 – Time Off**

*Note:* Duration of mesocycles (number of weeks) may vary depending on racing calendar and concrete club’s situation.

When working with swimmers of 8-10 years of age it is also recommended to use stretch cords, which promote correct stroke technique and build up aerobic-anaerobic endurance.

It is supposed that the age group Coach is creative and innovative when planning dry land training programs, which depend on individual peculiarities of young swimmers such as age, physical condition and level of qualification.

**Reference:**
1. 1 Multi-Year Age-group Swimmer Development Model. Australian Swimming Inc.