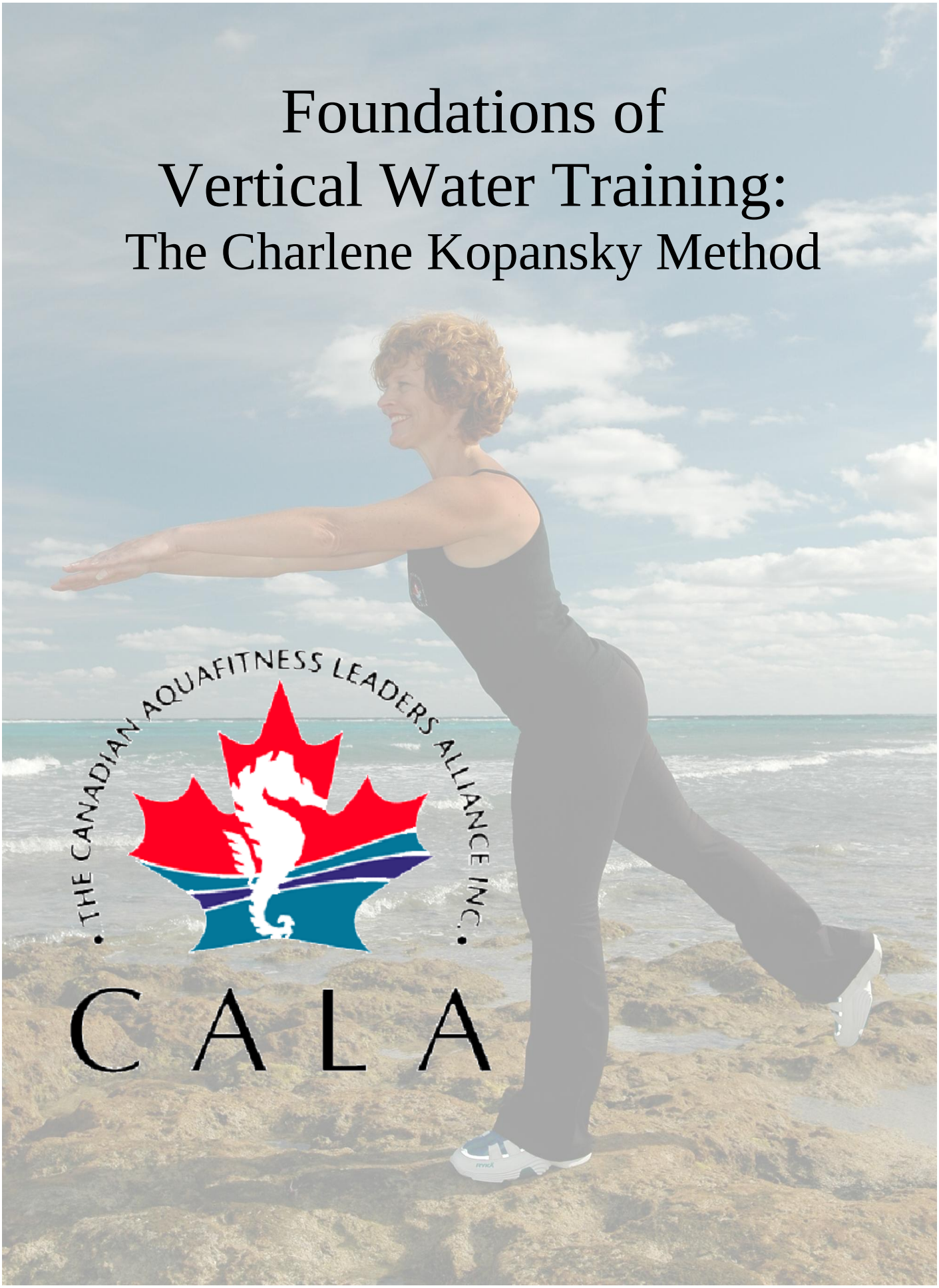
Foundations of Vertical Water Training:

The Charlene Kopansky Method



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CALA is active in Canada, the United Kingdom, Germany, South Africa, New Zealand and Australia.

Upon successful completion of an open book theory exam, you will be eligible to pursue your area of interest in vertical water training. This document opens the door for you to become certified in a Specialty of your choice. Successful completion of the theory exam confirms that you have knowledge about the following:
CALA Foundations of Vertical Water Training – "The Charlene Kopansky Method"

1. **Introducing CALA**
    - History and philosophy
    - Certification process for the specialties
    - Recertification guidelines
2. **Charting the Voyage to Effective Leadership**
    - Professional code of conduct
    - Holistic philosophy of leadership
3. **Body Alignment and Core Stabilization Aqua Physics**
    - Power posture cues
    - Relationship between properties of water and ability to align and stabilize the body
4. **Aqua Physics**
    - Unique qualities of water as a training medium
    - Adaptation of exercise intensity by manipulating the moving body
5. **Training Principles, Components of Fitness and Class Design**
    - Promotion of healthy active living
    - Components of fitness
    - Principles of training
    - Training design
6. **The CALA Movement Bank**
    - CALA movement compendium
    - Exercise design appropriate to varying water depths
    - Case studies and Session design tasks
7. **Risk Management and Client Communications**
    - Risk management: facility, leader and participant safety and screening
8. **Applied Anatomy for Vertical Water**
    - Anatomical terminology
    - Joint and muscle actions
    - Prime movers and stabilizers for CALA moves
    - Aquatic exercise analysis and design and Movement safety issues
9. **Physiology For Vertical Water Training**
    - Cardiovascular, respiratory and metabolic systems
    - Effects of training and immersion on the body systems
    - Basic nutrition
10. **Setting Sail**
    - Mentorship for skill development

Learning Objectives - Chapter Two

- define holism
- list qualities of an ideal leader
- describe holism in action
- clarify individual values and objectives in course participation
- review and accept the CALA Code of Conduct for Professionalism
- state the importance of holistic approach to vertical water training leadership
- demonstrate holism while leading a class
- describe the meaning of the acronym: PEP
- demonstrate examples of PEP applied to your leadership style
- know the CALA Code of Conduct for vertical water training leadership
- describe CALA standards for professional attire, appearance, and personal hygiene
- identify three challenges of teaching on deck
- name three ways to avoid injury when teaching on deck
- list three advantages of teaching on deck
- explain the CALA philosophy regarding use of equipment
- list three trigger words/phrases for delivering effective feedback
- demonstrate the ability to give and receive feedback effectively

Learning Objectives – Chapter Three:

- Understand how the properties of water challenge the ability to maintain body alignment.
- Understand the role of the leader / coach in observing the posture and alignment of participants.
- List the advantages of visual cueing.
- Identify the characteristics associated with correct posture.
- Explain the key components involved in observing posture and identify specific areas where participants require improvement.
- Explain how maintaining stability and correct posture differ during bottom contact and suspended movements.
- List the fundamental and essential verbal and visual alignment cues to facilitate Power Posture.
- Identify specific verbal and visual cues for each body region that contribute to Power Posture / alignment.
- Demonstrate techniques to educate participants about body alignment and core stabilization from head to toe.
- Identify three ways a leader can help participants improve body stability while exercising in water.

Learning Objectives – Chapter Four:

Characteristics of Water:

- explain how reflection affects the ability to observe participant movement technique
- explain how refraction interferes with accurate participant observation

Resistance:

- define resistance with respect to movement in water
- identify the factors that can be altered to affect pressure drag in water
- compare the density of water to the density of air
- explain how range of motion is related to work in the water
- identify and demonstrate the three CALA hand shapes used to modify surface area
- identify and demonstrate two CALA foot orientations used to modify resistance
- identify and demonstrate two lever length variations to modify surface area
- identify and demonstrate three body orientation variations to modify surface area
- explain how speed of movement in water affects resistance
- describe why increasing speed may not be the most effective way to overload the body
- describe why it is essential to use a variety of speeds for movement
- list three physical problems that could result from excessive use of very fast movement
- define range of motion
- define multidirectional resistance as it relates to vertical water training
- state Newton's Third Law - Action and Reaction
- demonstrate the ability to teach participants how to use complementary arm and leg actions to facilitate body stability during vertical water training
- describe why it is important to keep the joints firm but unlocked while moving in water
- describe how to manipulate resistance to satisfy a variety of fitness levels
- list five positive effects of resistance
- demonstrate low, moderate and high intensity resistance options for three arm actions and three leg actions

Learning Objectives - Chapter Five

- identify four inherited or uncontrolled factors that affect health and wellness
- list eight lifestyle or controllable factors that affect health and wellness
- list and define ten components of fitness
- list two activities which will enhance each component of fitness
- define and list four guiding principles of Active Living
- define the F.I.T.T. Principle
- define the Principle of Adaptive Recovery, the Principle of Overload, and the S.A.I.D. Principle
- list the three phases of a Vertical Water Training Class (group aqua fitness, water running, one to one aqua personal training, aqua arthritis, aqua kick box, aqua cycling…)
- know the physical (body), intellectual (mind) and emotional (spirit) significance of each phase of a class
- list six teaching tips for each of: warm up, cardio, muscle conditioning and stretch/relaxation
- design and lead a five to ten minute segment of each phase of a class
- identify and describe three monitors of exertion
- describe the advantages and/or disadvantages of each monitor of exertion
- select the most appropriate monitor of exertion for a VWT class and defend your selection
- list the four properties of water that cause target heart rate to be lower for vertical water training than for land fitness
- determine the aquatic THR zone for a 30 and a 60 year old participant
- design and demonstrate three levels of intensity for two cardio movements and a two muscle conditioning movements
- describe and demonstrate the CALA Base moves for legs, arms and abdominals listed in the movement compendium
- know the short form acronyms for the CALA base moves
- identify eight CALA leg moves with complementary arm moves suitable only for deep water or suspension
- identify eight CALA leg moves with complementary arm moves suitable for light bounce in chest deep water
- identify eight CALA leg moves with complementary arm moves suitable for propulsion
- design and demonstrate an eight movement sequence to enhance muscle conditioning for: a variety of joint actions: hip abductors and adductors, knee, elbow and shoulder flexors and extensors, spinal rotators, shoulder girdle abductors and adductors, hip flexors and extensors, spinal flexors and extensors
- identify at least four complementary arm actions for at least four CALA leg actions
- explain the purpose of the Participant Satisfaction Survey
- explain the need for participant health screening and describe two means to accomplish this

Learning Objectives - Chapter Six

- Know the CALA Movement Bank for Vertical Water Training: leg movements and arm movements
- Know the short form acronyms for the CALA Movement Bank
- Given CALA leg movements, be able to pair with an appropriate complementary arm movement
- Given CALA arm movements, be able to pair with and appropriate complementary leg movement
- Be able to cue the CALA movement bank from the deck using visual and verbal cues
- Be able to properly perform all CALA movements in the water at the appropriate depth of immersion
- Be able to teach the CALA VWT movements at a variety of intensities, using the intensity options outlined in the Aqua Physics chapter
- Define which CALA leg movements are suitable for chest deep water / suspended / deep water VWT
- Link CALA VWT movements together appropriately in order to achieve four – eight movement sequences that fit well together
- Determine whether VWT participants are at a stage in their training where they are ready for added equipment
- Modify VWT movements appropriately for each of the following:
  - different phases of a VWT session (warm up, cardiovascular, MSE or stretch)
  - use with different buoyancy options (LAPS)
  - to achieve core training benefits
  - added equipment: buoyant, resistive, elastic or weighted
  - beginner to advanced participants:
    - three levels of intensity during cardiovascular training
    - three levels of intensity during MSE training

Learning Objectives:

- Review the CALA Code of Conduct for Certified Professionals
- List the prerequisites for VWT instructor liability insurance and why you might need this coverage
- Outline at least five ways instructors can protect their own safety while teaching on deck
- List three reasons why CALA certified instructors must maintain current First Aid and CPR certifications
- Describe an emergency action plan for a typical pool facility
- List the steps to be taken if there is a cardiac incident in the pool while you are teaching VWT
- List three ways to prevent participant falls on the pool deck (when entering / exiting the pool)
- Explain the need for participant health screening
- Describe the Par-Q, its benefits and limitations
- Outline the purpose of a waiver
- List five things participants will want to know before attending their first VWT session
- Explain the purpose of ***introductory VWT classes***, how and why you would schedule these
- explain the purpose of the Participant Satisfaction Survey

Learning Objectives - Chapter Eight

ANATOMICAL TERMINOLOGY:

- name the primary skeletal muscle groups listed in this manual and the names of the muscles making up the muscle groups
- explain where each muscle begins and ends and its fibre direction(s)
- name the joint(s) that each muscle crosses and its joint action(s)
- identify and demonstrate two CALA movements that will work each muscle group in a prime mover
- describe and demonstrate one static stretch for each muscle group
- define and demonstrate anatomical position
- define and describe the three movement planes
- define and describe three anatomical terms of reference

BONE:

- list the characteristics of bone
- explain the beneficial effects of buoyancy on fragile bones
- explain the beneficial effects of resistance on bone mass

JOINT:

- define joint
- name and describe three primary classifications of joints
- identify two types of synovial joints and give two examples of each type
- explain the beneficial effects of buoyancy on joints
- explain the beneficial effects of hydrostatic pressure on inflamed or swollen joints
- record two concise verbal cues to protect the knee joint during the landing phase of a propulsion tuck in chest deep water
- record two concise verbal cues to protect the lumbar vertebral joints during the hyperextension phase of an anchored skate ski in chest deep water
- record two concise verbal cues to protect the hip and knee joints during the abduction phase of a pendulum
- name and demonstrate seventeen joint actions (exclude pelvic & shoulder girdle actions)
- identify and demonstrate at least one CALA movement for each joint action
- identify and demonstrate the six shoulder girdle actions
- identify and demonstrate the four pelvic girdle actions

CONNECTIVE TISSUE:

- list the characteristics and two examples of a ligament
- explain how buoyancy and resistance reduce the risk of injury to ligaments during aquafitness
- list the characteristics and two examples of tendons
- explain why it is important to cue ‘toe-ball-heel landing’ to protect connective tissues of the feet
- list the characteristics and two examples of cartilage
- identify and explain three properties of water that help to protect cartilage
- list the characteristics and two examples of fascia

SKELETAL MUSCLE:

- list the characteristics of skeletal muscle
- define sarcomere
- explain the sliding filament theory of muscle action
- define motor unit
- define twitch (with respect to motor unit)
- define the slow and fast twitch fibres
- define isotonic muscle action
- describe the two types of isotonic muscle actions
- list and explain two examples of CALA moves for concentric and eccentric muscle actions
- define isometric muscle action
- list and explain two examples of isometric muscle action which occurs during CALA movements
- explain double positive muscle activation
- list four examples of CALA moves that demonstrate double positive muscle action (muscle parity); describe how to verbally cue each of the moves listed, to ensure muscle parity

EXERCISE ANALYSIS:

- determine the muscle(s) involved; the joint action(s); the type of muscle action(s) for the following CALA moves: refer to all phases of the movement from start to finish
    - alternate bi/tri curls arms with narrow jog legs (light bounce, suspended)
    - chest hug/blade squeeze arms with jack legs (light bounce, contact)
    - unison cross country ski arms with 1/2 tempo narrow tucks (propulsion, contact)
    - cross front jack arms with pendulum legs (anchored, contact)
    - unison bi/tri curl arms with wide hamstring march legs (anchored, suspended)
    - unison breast stroke arms with unison narrow hamstring curl legs (anchored, suspended)
    - unison forward narrow elbow flextension arms with alt wide quad kick legs (L-C) - alternate ski arms with ski legs (A-S)
- define prime mover (agonist)
- define antagonist
- identify the prime mover muscle groups for all CALA basic movements
- identify the antagonistic muscle groups for any prime mover listed in this manual
- explain the importance of body balance in muscle development
- describe and lead an aquafitness class that promotes body balance
- define stabilizer/fixator muscles and list two examples
- define synergistic muscles and list two examples
- label bones, joints, ligaments, tendons, fascia, muscle groups, individual muscles on an anterior and posterior view of the human body

Learning Objectives - Chapter Nine

CARDIOVASCULAR SYSTEM:

- explain the purpose of the cardiovascular system
- describe the structure and function of the heart
- label a diagram of the heart and its associated blood vessels; indicate the direction of blood flow to, inside and from the heart
- indicate the oxygen and carbon dioxide levels in each heart chamber and in each blood vessel that enters and exits the heart
- describe the effect of hydrostatic pressure on blood distribution when the body is immersed in chest and neck deep water
- explain what causes the heart muscles to stretch and how this affects stroke volume and training heart rate during VWT
- explain pressure diuresis and its effect on aquafitness participants
- explain why dehydration will result from prolonged immersion during VWT
- describe a preventative measure to avoid dehydration during class
- identify two potential reasons for foot or leg cramps during VWT
- describe two preventative measures to help avoid foot or leg cramps
- define stroke volume (SV)
- identify the factors which can cause dramatic increases in heart rate, dizziness and eventual loss of consciousness (heat stroke)
- list three ways a leader can protect themselves from the effects of teaching on deck in a hot, humid environment
- define cardiac output (Q)
- identify the factors that affect training heart rate and explain their effects on the body
- describe the physical properties and the functions of arteries, arterioles, veins, venules and capillaries
- define blood pressure and identify normal blood pressure
- define systolic and diastolic pressure
- describe how participation in aquafitness affects systolic and diastolic pressure
- define atherosclerosis
- list three functions of the blood
- describe the function of red blood cells (erythrocytes)
- explain why aquafitness causes less stress on rbc's than land fitness
- describe what happens to blood distribution during exercise in water and on land
- explain the effect of thermal conductivity on heat dissipation and training heart rate during Vertical Water Training
- describe three cardiovascular training response factors that must be considered when leading a class

Learning Objectives - Chapter Ten

- Waiver Form – Mandatory to submit to CALA Course trainer or Course Host
- Evaluation Form – Mandatory to submit to CALA
- VWT Proctor Guidelines
- VWT Theory Exam Writing Guidelines