

APPENDIX B

Certification Exam Content Outline

Examination Content Outline

The Examination Content Outline is essentially a blueprint for the exam. As you prepare for the exam, it is important to remember that all questions are based on this outline.

Target Audience Statement

Lifestyle and Weight Management Consultants (LWMCs) develop and implement weight-management programs in cooperation with qualified health professionals, balancing the three critical components of nutrition, exercise programming, and behavior modification within the framework of current guidelines and standards.

The following eligibility requirements have been established for the LWMC certification examination:

- At least 18 years of age.
- Adult CPR certification, current at the time of the examination.
- Hold a current ACE Personal Trainer, Group Fitness Instructor or Clinical Exercise Specialist Certification; or an NCCA- accredited certification in health and fitness; or hold a four-year (bachelor's) degree in Exercise Science, Nutrition or a related field. Registrants holding degrees in Nutrition or Nursing must submit documentation supporting completion of Exercise Science-related coursework at the time of registration.
- 300 hours of work experience designing and implementing weight management and exercise programs for overweight and obese individuals.

Domains, Tasks and Knowledge and Skill Statements

A Role Delineation Study completed for the Lifestyle and Weight Management Consultant certification first identified the major categories of responsibility for the professional. These categories are defined as Domains. It was determined that the profession can be divided into four Performance domains, or major areas of responsibility. These performance domains are:

- Domain I: Client Assessment**
- Domain II: Program Development and Implementation**
- Domain III: Program Modification and Adherence**
- Domain IV: Professional Responsibility**

The Lifestyle and Weight Management Consultant draws upon knowledge from three foundational sciences or Content domains in their work. This content domain includes all topics important to the competence of the Lifestyle and Weight Management Consultant and applies primarily to the client assessment, program development and implementation, and program modification and adherence performance domains.

The content domains are:

- Nutrition
- Lifestyle Modification
- Exercise Science

The domain of Exercise Science was delineated further into three significant topics: anatomy, exercise physiology, and kinesiology (Table 1). Within each performance domain, there is additional domain-specific information referring to tests, procedures, and techniques.

APPENDIX B

CERTIFICATION
EXAM CONTENT
OUTLINE

Each domain is comprised of Task Statements which detail the job-related functions under each domain. Each task statement is further divided into Knowledge and Skill Statements to further detail the scope of information required and how that information is applied in a practical setting for task statement.

The domains are presented in two dimensions (Table 2):

- Performance domains that exist vertically for Client Assessment, Program Development and Implementation, Program Modification and Adherence, and Professional Responsibility
- Content domains that exist horizontally for Nutrition, Lifestyle Modification, Exercise Science (Anatomy, Exercise Physiology and Kinesiology) and Domain-Specific Knowledge

DOMAIN 1: CLIENT ASSESSMENT

30%

Task 1 - Establish an environment that fosters effective communication using appropriate interviewing techniques to obtain accurate, comprehensive information and establish rapport

Knowledge of:

1. Communication techniques (e.g., active listening, appropriate eye contact, reflecting and other attending behaviors, nonverbal vs. verbal communication).
2. Effective interviewing techniques (e.g., open-ended questioning, clarifying, paraphrasing, probing, informing, summarizing).
3. Factors that build and enhance rapport (e.g., empathy, genuineness,

Table 1: Exam Content Blueprint for Exercise Science Domain: Lifestyle and Weight Management Consultant Certification

Specific Topics Domain	Test Blueprint	
	Percentage of Items on Test	Number of Items on Test
Anatomy	4.03%	5
Exercise Physiology	6.18%	7
Kinesiology	4.38%	5
Total:	14.59%	17

Table 2: Exam Content Outline: Lifestyle & Weight Management Consultant Certification

Content Domain					
Performance Domain	Total Items	Nutrition	Lifestyle Modification	Exercise Science	Domain-Specific Knowledge
Client Assessment	38	7	7	5	19
Program Development and Implementation	42	8	7	6	21
Program Modification and Adherence	36	6	6	6	18
Professional Responsibility	9	0			
Total:	125	21	20	17	58

nonjudgmental responses, client confidentiality).

4. Cultural, ethnic, and personal differences as they affect communication, lifestyle, dietary habits, and personal and interpersonal behavior (e.g., common assumption, misconceptions, complicating factors).
5. Environmental factors that affect communication (e.g., location, noise, temperature, distractions, sense of privacy).
6. Psychological factors that influence an individual's self-image and their impact on the communication process.

Skill in:

1. Selecting an appropriate environment for consultation sessions.
2. Applying interviewing and communication techniques.
3. Respecting the client's personal characteristics (e.g., gender, age, cultural/ ethnic background) in all communication.
4. Building rapport.
5. Avoiding behaviors that are detrimental to building rapport (e.g., prejudicial statements, negative body language, and unproductive assumptions with regard to client's body size, eating habits, past success/failures with weight management).
6. Interpreting body language and recognizing incongruities between verbal and nonverbal behaviors.

Task 2 - Interview the client using a health risk appraisal to make appropriate test selections and determine the need for referral to an appropriate health professional.

Knowledge of:

1. Components of a client screening and health history form that document the client's physical and psychological health status, such as age, gender, body weight, blood pressure, personal health risk factors, mental health treat-

ment history, biomechanical injuries/limitations, medications, and supplements.

2. Effects of and appropriate precautions to take with respect to prescription and non-prescription drugs (e.g., beta blockers, diuretics, antihistamines, tranquilizers, antidepressants, anti-anxiety, thyroid medications, diet pills, cold medications, nicotine).
3. Primary and secondary cardiovascular risk factors and their significance relative to referral and appropriate application of assessment tools.
4. Significance and limitations of measurement data obtained from assessment screening and testing.
5. Applicable guidelines and position statements published by accepted organizations (e.g., American College of Sports Medicine, American College of Obstetricians and Gynecologists, American Heart Association, American Diabetes Association, Institute of Medicine, National Cholesterol Education Program, U.S. Department of Agriculture), and their implications for referral and weight management.
6. Physical and psychological conditions which may require referral to appropriate allied health professionals (e.g., cardiovascular disease, diabetes, anorexia, bulimia, chronic dieting, compulsive overeating, morbid obesity, hypertension, elevated lipids, pregnancy, HIV/AIDS, being underweight, asthma, COPD, stroke, arthritis, anxiety disorder, depression).
7. Appropriate allied health professionals to use as referrals (e.g., physicians, psychotherapists, registered dietitians).

Skill in:

1. Processing the client's health history and interview and observation data relative to accepted guidelines, and making safe and effective decisions regarding continuance and/or referral.

2. Identifying and taking appropriate precautions with respect to prescription and non-prescription drugs.
3. Recognizing the characteristics of physical and psychological conditions that may indicate the need for referral.
4. Initiating referrals to appropriate health professionals, as required.

Task 3 - Review the client's exercise, dietary, and lifestyle questionnaires using appropriate evaluation techniques to identify client goals, exercise preferences, areas for lifestyle modification, and referral to provide the basis for program development.

Knowledge of:

1. The components of a comprehensive client profile including current and past health conditions, client's readiness to change, health risks, experience with health and fitness lifestyle change and personal weight management goal.
2. The factors that indicate a client's readiness to change (e.g., intrinsic and extrinsic motivators, past success with lifestyle change and weight management, goal setting experiences).
3. Genetic, psychological, and physiological factors related to obesity and how they affect approaches to weight management.
4. Methods used to identify client goals, perceived and unperceived needs, and expectations for change.
5. Cognitive, affective, and psychomotor factors and learning styles that influence progress and goal attainment.
6. When to de-emphasize the use of fitness testing and body composition analysis.
7. The relationship of body mass index (BMI), waist-to-hip ratio (WHR), and circumference measurements to body weight, and the determination of appropriate body weight.

Task 4 - Conduct appropriate testing using accepted protocols in order to collect baseline information about the client's fitness, health, and dietary habits.

Knowledge of:

1. Appropriate physiological fitness testing protocols, purposes, inherent risks and benefits associated with testing protocols (e.g. aerobic fitness, body composition, flexibility, muscular strength and muscular endurance).
2. Appropriate dietary assessments protocols, purposes, inherent risks and benefits (e.g., 24-hour dietary recalls, food logs).
3. Warning signs and symptoms that necessitate intervention during testing.
4. Physiological effects of and appropriate precautions required with respect to medications.
5. The motivational and demotivational implications of fitness testing.

Skill in:

1. Assessing physical fitness levels using appropriate testing protocols.
2. Recognizing warning signs and symptoms that necessitate intervention during testing.
3. Interviewing and data collection techniques to collect nutritional data.

DOMAIN II: PROGRAM DEVELOPMENT AND IMPLEMENTATION

34%

Task 1 - Determine baseline values by comparing the client's assessment data to industry standards and guidelines in order to develop an individualized program.

Knowledge of:

1. Applicable standards, guidelines, and position statements published by accepted organizations (e.g., ACSM, YMCA, ACOG, ADA, AHA, IOM,

- NCEP, USDA) to use in the formulation of program development.
2. Methods of interpreting the client's assessment data as it relates to established guidelines.

Skill in:

1. Gathering applicable standards and guidelines published by accepted organizations.
2. Applying acceptable standards and guidelines in the development of individualized programs.
3. Interpreting applicable standards, guidelines, and client health data.

Task 2 - Establish effective goals based on the client's needs, preferences, expectations, and potential barriers in order to create program direction and structure.

Knowledge of:

1. Principles of goal setting.
2. Qualities of a well-stated goal (i.e., specific, measurable, attainable, relevant, and time-bound).
3. Potential obstacles and challenges that may interfere with goal setting and goal achievement.
4. Biological, psychological, and social factors that impact goal setting and the development of safe and effective programs.
5. Communication styles to ensure collaborative goal setting based on client needs, preferences, and expectations.
6. Safe and effective weight loss methods and quantities.
7. Behavior change principles in goal setting.

Skill in:

1. Setting goals collaboratively that are specific, measurable, attainable, relevant, and time-bound).
2. Applying principles and knowledge of exercise, nutrition, and weight management to the establishment of short- and long-term goals.

3. Using effective communication techniques to develop an understanding of client needs, preferences, expectations, and potential barriers for goal setting.

Task 3 - Design appropriate program components consistent with industry standards and guidelines to modify behavior and ensure a safe and effective path toward goal attainment.

Knowledge of:

1. Concepts of energy balance including dietary intake (caloric values of food) and expenditure (energy BMR, requirements of physical activities).
2. Relationship of physical activity and exercise to health, physical fitness, and weight management with respect to mode, intensity, frequency, and duration of activity.
3. Different approaches to weight management and/or body composition change and the associated efficacy of each.
4. Dietary guidelines emphasizing balance, variety, and moderation.
5. Common nutritional supplements and weight loss products and their role in weight management.
6. Components of skill-related and health-related parameters of physical fitness.
7. Metabolic and physiological processes and aerobic and anaerobic physical activity.
8. Exercise programming concepts include mode, frequency, intensity, duration, and progression as applied to weight management.

Skill in:

1. Applying principles and knowledge of exercise, nutrition, and weight management.
2. Applying different approaches to weight loss and/or body composition change safely and effectively.

APPENDIX B

CERTIFICATION
EXAM CONTENT
OUTLINE

3. Approximating caloric intake (including food guide pyramid servings) and expenditure.
4. Using all components of an activity program (i.e., aerobic, strength, flexibility) and applying exercise programming principles (i.e., frequency, intensity, duration, and progression).

Task 4 - Empower the client through education about assessment information, program components, and the importance of long-term support systems in order to promote understanding, motivation, adherence, and self-efficacy.

Knowledge of:

1. Effective learning, teaching, and communication styles.
2. USDA Dietary Guidelines, macronutrients and micronutrients and their functions, nutrient and caloric content of common foods, and dietary choices related to health conditions.
3. Health, psychological, and performance benefits of physical activity and recommended dietary choices.
4. Importance of support for long-term adherence.
5. Relapse prevention principles and maintenance strategies.
6. Selection and preparation of healthful foods and beverages at home, in restaurants, and at the grocery store based on food labels, method of preparation, and key words on menus.
7. Misinformation, misconceptions, and sources of reliable information related to exercise, nutrition, and weight management.
8. Supplements, weight loss products, fad diets, and associated risks.
9. Proper hydration during physical activity.
10. Environmental factors related to physical activity and dietary intake.

Skill in:

1. Communicating the benefits of weight management and participation in physical activity programs.
2. Assisting the client in developing and/or enhancing social support systems.
3. Preparing the client for lapses and plateaus and developing a plan of action to handle them.
4. Explaining client assessment information as it relates to program design.
5. Explaining the individual program components in relation to program success and long-term adherence.

Task 5 - Maintain rapport by employing effective interpersonal skills to encourage program adoption and adherence.

Knowledge of:

1. Communication styles.
2. Factors that build and enhance rapport.
3. Cultural, ethnic, and personal differences as they affect communication, lifestyle, dietary habits, and personal and interpersonal behavior.
4. Verbal and nonverbal communication.

Skill in:

1. Interpreting body language and recognizing differences between verbal and nonverbal behavior.
2. Applying effective communication skills.
3. Applying techniques that build rapport.
4. Modifying interaction style and content appropriate to the client's personal characteristics.
5. Selecting appropriate environment for consultation services.
6. Avoiding prejudicial statements, negative, and/or unproductive assumptions with regard to the client's body size, eating habits, exercise habits, past successes/failures with weight management.

Task 6 - Instruct the client by demonstrating techniques and explaining key concepts in order to impart the knowledge and skills necessary for safe and effective program participation.

Knowledge of:

1. Appropriate application, safety, and effectiveness of various weight management techniques.
2. Effective learning, teaching, and communication styles.
3. Educational materials that are current, effective, and appropriate.
4. Selection of healthful foods and beverages at home, in restaurants, and at the grocery store based on food guidelines, food labels, method of preparation, and key words on menus.
5. Supplements, weight loss products, and fad diets and the risks associated with each.
6. Nutritional requirements during physical activity (energy needs, hydration).
7. Components of activity programs (aerobic, strength, flexibility) in relation to mode, frequency, duration, intensity, and progression.
8. Appropriate, safe, and effective exercise techniques and spotting procedures.

Skill in:

1. Explaining concepts related to nutrition and weight management.
2. Recognizing the signs and symptoms of exercise termination criteria and over-training.
3. Using appropriate spotting techniques for the client.
4. Explaining and demonstrating correct cardiorespiratory, resistance, and flexibility exercise techniques.

Task 7 - Facilitate client participation through observation, feedback, and the use of self-reported data in order to enhance program safety and progression toward goals.

Knowledge of:

1. Effective communication, feedback, and reinforcement techniques.
2. Accuracy of information obtained through client self-reported data and direct measurement.
3. Appropriate documentation procedures (SOAP notes) and their use.
4. Subjective and objective observation techniques.
5. Self-reported data collection procedures.

Skill in:

1. Educating the client in the use of self-report techniques.
2. Communicating information and feedback to the client and the health care team.
3. Observing and documenting client's progress towards program goals.

DOMAIN III — PROGRAM MODIFICATION AND ADHERENCE 29%

Task 1 - Review and discuss the client's progress toward goals in order to acknowledge achievements and identify barriers to success.

Knowledge of:

1. Principles of goal setting (i.e., specific, measurable, attainable, relevant, and time-bound).
2. Barriers to attaining goals (e.g., time restraints, weather changes, family obligations, financial issues) and strategies to overcome barriers.
3. Safe and effective weight loss, lifestyle change, and physical fitness programs.
4. Effective communication and interviewing techniques.
5. Methods for evaluating progress and the impact of the client's previous attempts at weight management.
6. Complexity of issues related to obesity, body size, eating disorders, and related lifestyle factors.

APPENDIX B

CERTIFICATION
EXAM CONTENT
OUTLINE

7. Professional boundaries as they relate to the client/consultant relationship.

Skill in:

1. Evaluating progress toward goals.
2. Creating appropriate goals that are specific, measurable, attainable, relevant, and time-bound.
3. Identifying and implementing strategies to overcome barriers.
4. Applying principles and knowledge of exercise, nutrition, weight management, and lifestyle change to the collaborative establishment of short- and long-term goals.
5. Applying effective communication and interviewing techniques.
6. Maintaining appropriate professional client/consultant boundaries.
7. Providing appropriate feedback and reinforcement.

Task 2 - Consider the client's perceptions and attitudes by discussing the effectiveness of program components in order to determine areas that require modification.

Knowledge of:

1. The factors that influence an individual's self-image and their impact on communication and goal achievement.
2. Genetic, psychological, and physiological factors related to obesity and how they affect approaches to weight management.
3. Importance of emphasizing the development of healthful habits instead of body weight/composition.
4. Factors that build and enhance rapport (e.g., empathy, genuineness, non-judgmental responses).
5. Common assumptions with regard to client's body size, eating habits, and exercise habits, and impact such assumptions have on the client.
6. Communication techniques (e.g., interviewing, active listening, appropriate eye contact, reflecting, other attending behaviors).

7. Effects of personal issues and biases related to communication, rapport, and program design.

Skill in:

1. Interviewing the client to identify perceptions and attitudes (e.g., listening, questioning, responding).
2. Overcoming personal issues and biases.
3. Recognizing factors that affect the client's self-image and self-acceptance.
4. Applying various behavior modification techniques.
5. Modifying the client plan with respect to client progress and goals.
6. Differentiating between real and perceived barriers.

Task 3 - Determine the client's current fitness levels, dietary habits, and associated lifestyle behaviors by performing ongoing assessments in comparison with previous values in order to support adherence, determine program modifications, and evaluate the need for referral.

Knowledge of:

1. Timing, selection, and procedures related to periodic assessments.
2. Significance of, limitations of, and incongruities in assessment data.
3. Appropriate physiological fitness testing protocols and their purposes, inherent risks, and benefits (e.g. aerobic fitness, body composition, flexibility, muscular strength and muscular endurance).
4. Appropriate dietary assessment protocols and their purposes, inherent risks, and benefits (e.g., 24-hour dietary recalls, food logs).
5. Warning signs and symptoms that necessitate intervention during testing.
6. Physiological effects of and appropriate precautions required with respect to medications.
7. The motivating and demotivating implications of fitness testing.

8. Scope of practice for relevant health professionals and when to make referrals.
9. Effective and confidential record keeping methods.

Skill in:

1. Reassessment of physical fitness levels using appropriate testing protocols.
2. Recognizing warning signs and symptoms that necessitate intervention during testing.
3. Evaluating reassessment data with respect to the client's program.
4. Making effective referrals.
5. Maintaining client confidentiality.

Task 4 - Revise program goals collaboratively by revisiting client needs, expectations, and potential barriers in order to provide direction for program modification.

Knowledge of:

1. Principles of effective goal setting (i.e., specific, measurable, attainable, relevant, and time-bound.).
2. Potential obstacles and challenges as they affect communication, lifestyle change, dietary habits, and personal and interpersonal behavior.
3. Physiological, psychological, and social factors that impact goal setting and the development of safe and effective programs.
4. Relevance and limitations of assessment data in establishing client profile and short- and long-term goals.
5. Facilitating change as it applies to the role of the weight management consultant (e.g., goal setting, support, motivation).
6. Communication techniques that ensure collaborative goal setting.
7. Factors that enhance rapport (e.g., empathy, genuineness, nonjudgmental responses).
8. Importance and application of feedback, reinforcement, acknowledgment, and encouragement.

9. Safe and effective methods and rates of weight loss.

Skill in:

1. Using effective verbal and nonverbal communication techniques (e.g., interviewing, feedback, body language) while respecting the client's personal characteristics.
2. Avoiding behaviors that are detrimental to maintaining rapport (e.g., prejudicial statements, negative body language, inappropriate assumptions with regard to client's body size, eating habits, past success/failures with weight management).
3. Applying the principles of exercise, nutrition, and weight management to the collaborative establishment of short- and long-term goals.

Task 5 - Modify the client's existing program based on ongoing assessments, goal achievement, and perceived barriers to promote sustainable lifestyle change.

Knowledge of:

1. Exercise programming with respect to frequency, intensity, duration, and progression as applied to weight management.
2. Appropriate modes of physical activity (e.g., swimming, biking, walking, strength training) and their integration into a weight management exercise program.
3. Cognitive, affective, and psychomotor factors and learning styles that influence progress and goal attainment.
4. Educational materials that are safe, effective, and appropriate for the client.
5. Strategies to facilitate change as it applies to the role of the weight management consultant (e.g., support systems, motivation).
6. Relapse prevention principles and maintenance strategies.

APPENDIX B

CERTIFICATION
EXAM CONTENT
OUTLINE

7. Self-monitoring techniques.
8. Importance and application of feedback, reinforcement, acknowledgment, and encouragement.

Skill in:

1. Implementing appropriate program revisions with respect to frequency, intensity, duration, and progression as applied to weight management.
2. Using effective and constructive communication techniques.
3. Encouraging client independence and self-efficacy through education, coaching, and recognition of achievements in order to enhance program adherence and achieve long-term success.

DOMAIN IV — PROFESSIONAL RESPONSIBILITY

7%

Task 1 - Maintain a professional consultant/client relationship by adhering to legal and professional boundaries, standards of care, and the American Council on Exercise Code of Ethics in order to protect the client and minimize liability.

Knowledge of:

1. Professional boundaries as they relate to the client/consultant relationship.
2. American Council on Exercise Code of Ethics.
3. Process for reporting violations of the American Council on Exercise Code of Ethics.
4. Accepted standards of care.
5. Scope of practice.
6. Liability issues associated with acting outside the appropriate standard of care, scope of practice, and the Code of Ethics.

Skill in:

1. Assessing areas of risk (e.g., client, facilities).

Task 2 - Ensure continuing competence and professional growth by staying current with scientifically based research, theories, and practice in order to provide the most effective services for clients, the public, and other health professionals.

Knowledge of:

1. Available continuing education programs (e.g., conferences, workshops, college/university courses, tele-seminars, on-line courses, in-home study courses).
2. American Council on Exercise continuing education requirements.
3. Appropriate and relevant consumer and professional publications (e.g., journals, books, texts, videos, DVDs, CDs, on-line publications, and resources).

Skill in:

1. Recognizing credible resources.

Task 3 - Ensure the highest quality of service for clients by establishing a referral network in related disciplines and cooperating as a member of the client's health care team in order to uphold professional standards and maintain an appropriate scope of practice.

Knowledge of:

1. Appropriate health professions required for outside referral.
2. Appropriate forms and documents required to involve outside health professionals in order to maintain continuity of care.

Skill in:

1. Identifying and networking with appropriate health professionals.
2. Establishing a method for referrals.
3. Creating a means of ongoing communication and follow up with appropriate professionals.

Task 4 - Treat all individuals with respect, empathy, and equality regardless of weight, ethnicity, nationality, sexual orientation, gender, age, disability, religion, marital status, socioeconomic status, and health status in order to maintain integrity in all professional relationships.

Knowledge of:

1. Personal issues and biases that may interfere with effectiveness.

Skill in:

1. Modifying interaction style and content appropriate to client's personal characteristics (e.g., gender, age, cultural/ethnic background).

Task 5 - Document client-related data, communications, and progress using a secure record-keeping system that is confidential, accurate, current, and retrievable in order to maintain continuity of care and to minimize liability.

Knowledge of:

1. Implications of breaching client confidentiality.
2. All required paperwork and documentation (e.g., waivers, informed consent, medical history, health risk appraisal, client contracts).
3. Effective and confidential record-keeping.

Skill in:

1. Understanding the importance of confidentiality.
2. Differentiating between non-confidential and confidential documents.

Task 6 - Respond appropriately in emergency situations in accordance with emergency action plans in order to ensure client safety.

Knowledge of:

1. Cardiopulmonary Resuscitation and Automated External Defibrillator procedures.
2. Worksite emergency plan.

3. Appropriate Emergency Medical Service system activation.
4. First aid.
5. Occupational Health and Safety Administration guidelines regarding blood-borne pathogens.

Skill in:

1. Identifying emergency situations.
2. Identifying potential physical hazards.
3. Identifying warning signs that require intervention.
4. Staying calm in emergency situations.

Task 7 - Develop risk management strategies using recognized guidelines (e.g., IHRSA, ACSM, OSHA) in order to protect the client, consultant, and other relevant parties.

Knowledge of:

1. Negligence laws (comparative and contributory) as they pertain to LWMCs.
2. Intellectual property laws as they apply to video, written materials, Internet, and trademarks.
3. Limitations of waivers and informed consent.
4. Characteristics, types of coverage, and appropriate professional and general liability insurance.
5. Sexual harassment and discrimination laws.

Skill in:

1. Completing appropriate incident reports.
2. Developing appropriate risk management program for a facility or business.

CONTENT DOMAINS

The Lifestyle and Weight Management Consultant draws upon knowledge from three foundational sciences or Content domains in their work. These content domains include all topics important to the competence of the Lifestyle and Weight

APPENDIX B

CERTIFICATION
EXAM CONTENT
OUTLINE

Management Consultant and apply primarily to the client assessment, program development and implementation, and program modification and adherence performance domains.

The content domains are:

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Nutrition

Knowledge of:

1. Macronutrients, micronutrients, hydration, supplements, engineered foods, and alcohol, drugs, and stimulants.
2. Current credible nutrition resources, nutrition guidelines, food labels, food safety, food selection and preparation, and human digestion and absorption.
3. Popular diets, eating disorders, and associated health risks.
4. Nutrition requirements for fitness and sport, stages of life, special populations, vegetarians, energy balance and weight control, and different cultural populations and ethnic groups.

Skill in:

1. Assisting clients with appropriate food selection and dining choices while staying within scope of practice boundaries.

Lifestyle Modification

Knowledge of:

1. Elements of lifestyle programming, including stages of change, goal setting, motivation, problem solving, responsibility/accountability, adherence/relapse, psychological benefits of participation, and support strategies.
2. Common assessment tools (e.g., attitudes, belief systems, behavior, and lifestyle).
3. Communication techniques including learning and leadership styles.
4. Environmental, individual/personal factors, and obesity and eating disorders.

Exercise Science

Knowledge of:

Anatomy

1. General anatomy of the following systems: musculoskeletal, cardiorespiratory, neuromuscular, digestive, and endocrine.
2. General anatomical terminology (e.g. landmarks, planes of movement, position, muscle roles, origin, insertion).

Knowledge of:

Kinesiology

1. Human movement as it relates to participant safety.
2. Functional range of motion of the different joints of the body, including joint mobility and flexibility.
3. Muscle function, types of muscular contraction, and factors affecting movement (e.g., neurological, proprioceptive, biomechanical, kinesthetic awareness).
4. Principles of balance, proper postural alignment, and appropriate exercise design to improve these parameters.

5. Biomechanical concepts of human movement, including the use of Newton's Laws (i.e., inertia, acceleration, and reaction) as they apply to exercise.
6. Terminology as it applies to muscular fitness (e.g., training effect, resistance, overload, specificity, repetitions, sets, frequency, rest periods, progression, muscular atrophy and hypertrophy).
7. Various methods of resistance, cardiovascular, and flexibility training, and the risks and benefits associated with each.

Knowledge of:

Exercise Physiology

1. Components of physical fitness, principles of training, and acute and chronic responses to exercise programming.
2. Cardiorespiratory systems with respect to oxygen-carrying capacity, delivery, and extraction; and cardiorespiratory terms as they apply to training.
3. Metabolic terminology and physiology including macronutrient utilization, anaerobic and aerobic metabolism and utilization.
4. Neuromuscular physiology, muscle fiber types and characteristics, and muscle proprioceptors.
5. Benefits of aerobic exercise and programming guidelines to improve cardiorespiratory fitness in both healthy and diseased individuals.
6. Guidelines to observe when exercising in various environmental conditions (e.g., heat, humidity, cold, high altitude, air pollution).
7. Physiology of common musculoskeletal and metabolic disorders (e.g., obesity, diabetes, thyroid, hypertension, hypercholesterolemia).