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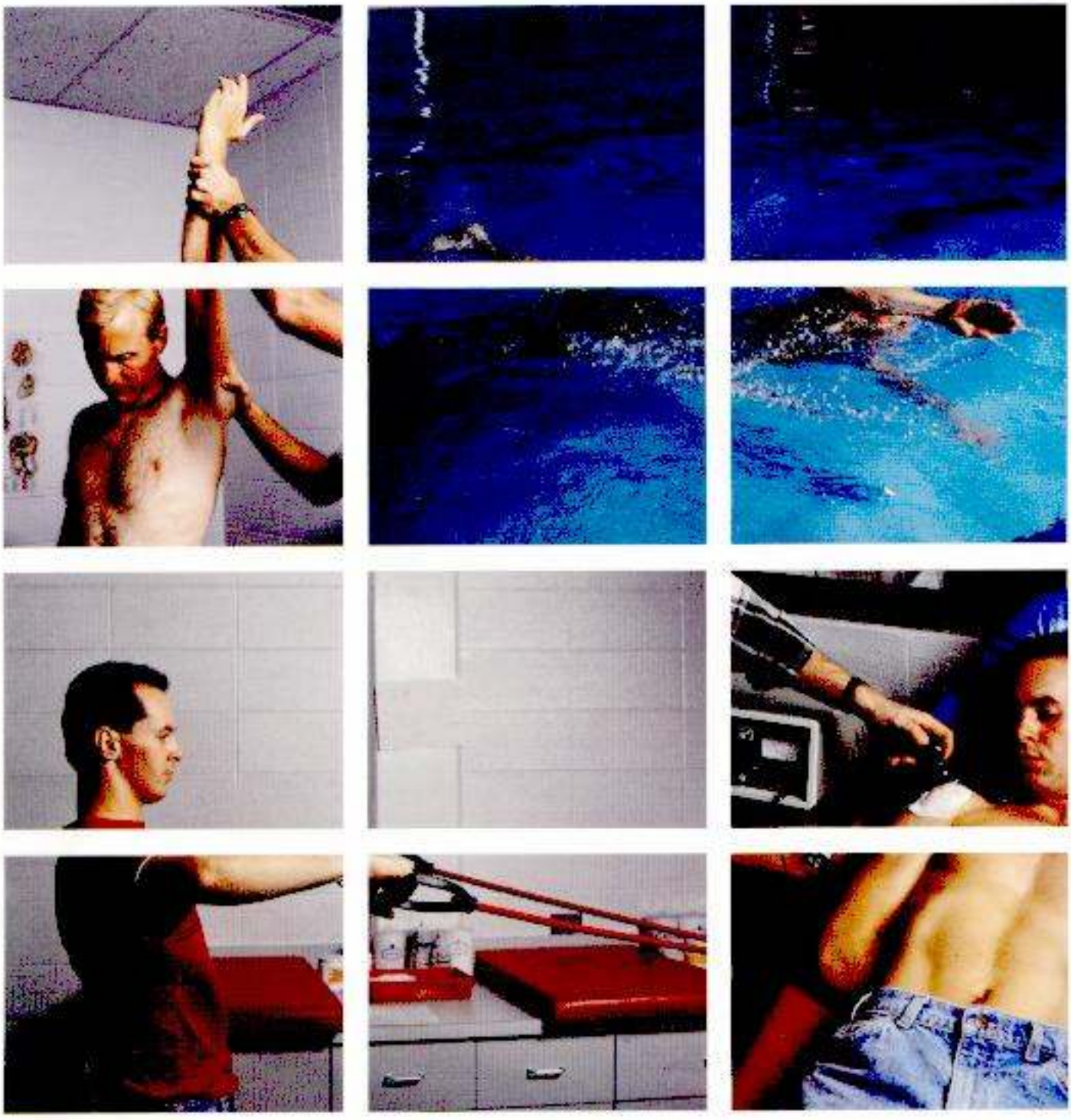

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Nutrition Feature

Sports Nutrition Assesment

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A nutritional computerized monitoring system has many potential uses within the sports medicine setting.

Table 1 Physiological Measurements

	1	2	3	4	5	6	7
Date	11/04/90	11/19/90	/ /	/ /	/ /	/ /	/ /
Height (in.)	0	0	0	0	0	0	0
Weight (lb.)	172.00	171.00	0.00	0.00	0.00	0.00	0.00
Tricep	6.3	6.4	0.0	0.0	0.0	0.0	0.0
Bicep	2.7	3.5	0.0	0.0	0.0	0.0	0.0
Illiac	4.9	5.0	0.0	0.0	0.0	0.0	0.0
Scapular	7.8	8.2	0.0	0.0	0.0	0.0	0.0
% Body Fat	9	10	0	0	0	0	0
NLBM (lb.)	15.00	17.10	0.00	0.00	0.00	0.00	0.00
LBM (lb.)	157.00	153.90	0.00	0.00	0.00	0.00	0.00
Fat (lb.)	0.00	2.10	0.00	0.00	0.00	0.00	0.00
Muscle (lb.)	0.00	-3.10	0.00	0.00	0.00	0.00	0.00
Up Test (Rep.-Wt.)	0 — 0	0 — 0	0 — 0	0 — 0	0 — 0	0 — 0	0 — 0
Lo Test (Rep.-Wt.)	0 — 0	0 — 0	0 — 0	0 — 0	0 — 0	0 — 0	0 — 0

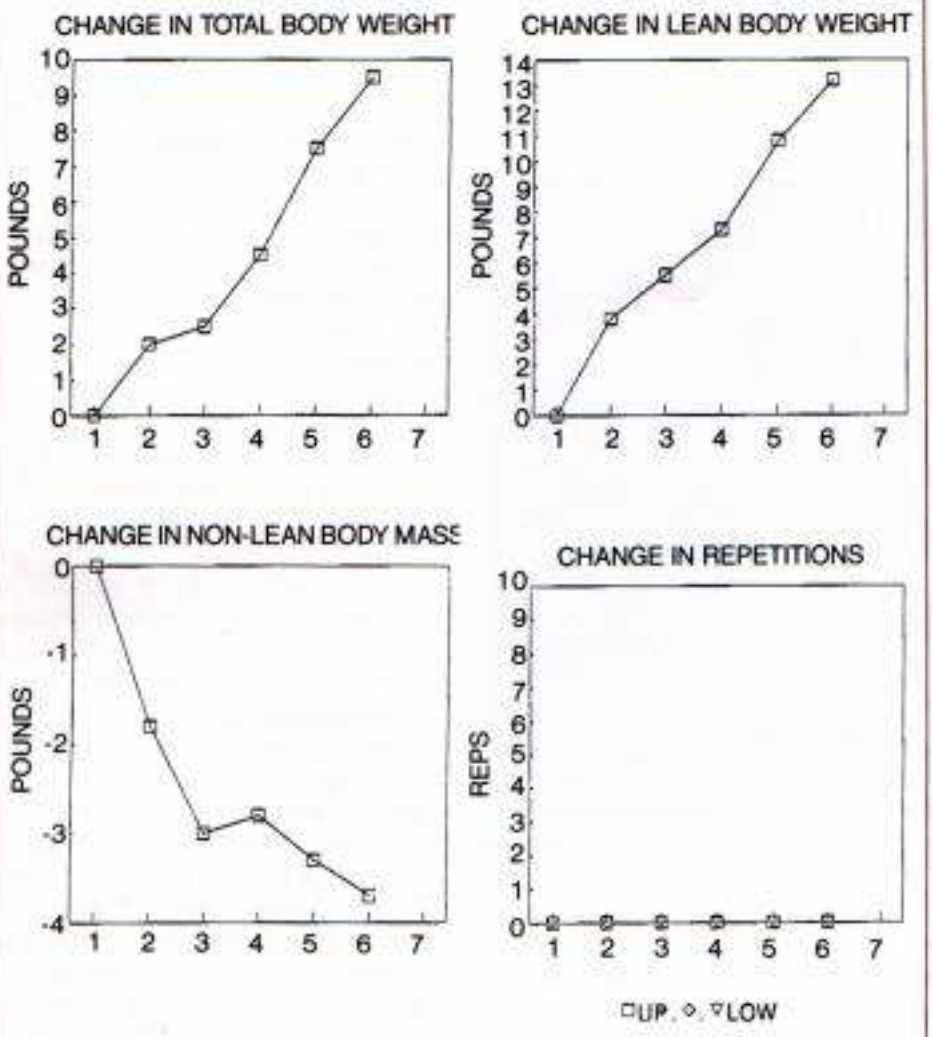
I recently had the pleasure of serving on a Nutrition Task Force at the United Staes Naval Academy. The purpose of this task force was to review and make recommendations regarding the nutritional status of the midshipmen as a whole, and of the athletic teams, in particular.

The convening of this Nutritional Task Force was precipitated by a problem that developed among several members of the football team during the summer and fall practices. The players were exhibiting a steady weight loss. This was not a temporary fluid loss, but a loss of lean body mass as assessed by body composition measurements. Service academy football players generally weigh less than their counterparts at civilian schools because of admission limitations based on height an weight. Therefore, this weight loss put the players at an even greater weight disadvantage than normal. In addition to admission limitations, student-athletes at service academies have a more rigorous daily routine as compared to civilian schools. The typical football player at a civilian school might carry 14-17 hours of classes with those classes meeting for 3 hours, 3 days per week and for 3 hours the other two days. Whereas, a service academy student carries approximately 21 hours of classes and attends those classes 5 days per week during all designated class periods. The early reveille, marching, meal formations, inspections, uniforms, and a demanding engineering-based curriculum add up to the most demanding and stressful lifestyle of any college student in the country. Therefore, the nutritional needs of service academy student-athletes must be closely monitored to insure the proper intake of nutrients for both health and athletic performance.

Prior to these meetings, seven days of meals from the midshipmen dining hall were analyzed. The analysis of these 21 meals revealed a food pattern that was high in fat, cholesterol, and refined sugar and low in complex carbohydrates (fruits, vegetables, grains, and beans). With the exception of an increased number of calories, the athlete's food pattern was very similar to that of the non-athlete, i.e. high in fat cholesterol, refined sugar and low in complex carbohydrates. From a nutritional stand-

Table 2

ASSESSMENT OF PHYSIOLOGICAL MEASUREMENTS



athletic department included the implementation of multiple meals and a monitoring system designed to measure certain physiological components. The "meal supplements" would be taken before, during , and after the regular meals to increase calories and the physiological measurements would be used to assess the effectiveness of the nutritional program.

The Navy football team has begun a pilot program of multiple meals and assessment using a computerized monitoring system designed by nutrition-fitness expert, Jim Feijo, and insurance executive, Duncan Ingraham. Every two weeks, the physiological measurements designed to assess nutritional compliance, are taken and entered into the computer program. (Table 1) A visual display is then generated which tracks seven different measurement periods. (Table 2) The underlying purpose of these measurements, which include skinfold measurements and strength tests, is to monitor the body weight-lean body mass (LBM) ratio for changes. If a negative change in LBM and/or strength is detected, the program initiates information for an adjustment in the regular nutrition (dining hall) or in the number of meal supplements.

This system of assessment is currently being used with wrestlers, seriously ill patients, and marathon runners. It's potential uses include the monitoring of in- season strength and conditioning programs and during the rehabilitation of injured athletes.

point, this type of food pattern will negatively affect long term health and immediately impact through a decrement in athletic performance.

With the expert guidance and cooperation of Capt. Steve Fabray, Supply Officer at the Academy and Cmdr. Carl Tamulevich, Assistant Athletic Director, these meetings generated several positive recommendations to improve the nutrition of the midshipmen. Two additional recommendations were made to the athletic department to improve the nutritional status of the athletes.

The first recommendation dealt with a nutritional education program for the midshipmen designed to instill a lifestyle of proper nutrition, not only while they are at the Academy, but when they go into the fleet. This program is to be directed by a full-time individual knowledgeable in nutrition and athletic performance. The second recommendation called for a change in the food served in the dining hall to reflect a food pattern that is lower in fat, cholesterol, and refined sugar and higher in complex carbohydrates. It was reiterated that the dining hall changes must be accompanied by the education program or the effectiveness of these changes would be lost.

From the results of the dietary analysis previously mentioned and body composition measurements, it was felt that the weight loss was due to "insufficient calorie intake". Therefore, the two additional recommendations to the

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