AMERICAN COLLEGE of SPORTS MEDICINE

Southeast Regional Chapter

November 28, 1994

Brett Lee
Department of Leisure Studies & Physical Education
Christopher Newport University
50 Shoe Lane
Newport News, VA 23606

Dear Mr. Lee,

I am pleased to inform you that the abstract you submitted to the Southeastern Chapter of the American College of Sports Medicine entitled "**CONSIDERATIONS FOR THE PROPER SELECTION OF DIVING FINS**" has been accepted as a **poster presentation** at the 1995 annual meeting in Lexington, KY.

The date and times for your presentation are given below. All posters sessions will be held in Ball Room IV. This area is located with the exhibits and is in a location likely to attract many viewers. Please read carefully the attached memo regarding the procedures associated with preparing and presenting your work.

Thank you for your contribution to the SEACSM Annual Meeting.

Sincerely,

J. Larry Durstine, Ph.D.
President-Elect SEACSM

Poster Presentation Session:		Motor Control
Date:		Friday February 3
Time:	Have Poster Set For Viewing	10:15-12:00
	Authors Presents Poster From	11:00-12:00

AMERICAN COLLEGE of SPORTS MEDICINE

Southeast Regional Chapter

February 2-4, 1995
23nd Annual Meeting
Radisson Plaza Hotel
Lexington, Kentucky

ABSTRACTS

CONSIDERATIONS FOR THE PROPER SELECTION OF DIVING FINS

B.M. Lee, Christopher Newport University, Newport News, VA 23606

49

The selection of fins may encompass wading through arrays of sizes, shapes, materials, and other fin properties. With all the manufacturers claims of superiority, the choice for the consumer may be a difficult one. Independent investigations have revealed that differences between diving fins are the amounts of water displaced per cycle (power) and also the impedance of the fin to forward movement (drag); the net effect on the diver being varying amounts of resistance (torque) exerted on the lower extremities to move at a given velocity. While previous investigations have attempted to determine the best set of fins, the theory of a single "best" fin may be inappropriate. To test this idea, three sizes (small, medium, and large) and three flexibilities (flexible, medium, and stiff) of diving fins were tested at three intensities (RPE's 9, 13, & 17) using a heterogeneous subject pool (n=18). Qualitative analysis of the finning revealed differences between the divers motions. For this reason, a standardized motion was developed (flexion & extension primarily at the hip with minimal amounts at the knee). Significant interactions existed 1) between fins and intensity ($p < .01$), and 2) between size, flexibility, and intensity ($p < .05$). These results suggest that the efficiency of each set of fins, as well as the effects of both size and flexibility varied depending upon the intensity. Therefore, it was concluded that the proper selection of diving fins must take into consideration the intensity at which the fins will be used before any decisions relating to size and flexibility can be reached. Given this stipulation, plots of these data suggested that less flexibility increased efficiency at the easiest intensity with all sizes of fins and that less flexibility also increased efficiency at the hardest intensity with the large size fins.

ANTHROPOMETRIC EFFECTS ON RELATIVE STRENGTH DURING KNEE EXTENSION ON AN ISOKINETIC DEVICE

Brown LE, Findley BW, Whitehurst M, Gilbert R, Groo DR, Ward JA South Palm Orthopedics, Delray Beach, FL 33484

50

The purpose of this study was to investigate the relationship between the anthropometric variables of gravity effect torque (GET) and limb length (LL) with peak torque per unit of cross sectional area during knee extension exercise Fifteen males (age 29 6±7 2 yrs) performed three maximal concentric knee extension repetitions at isokinetic speeds of 180, 240, 300, 360, 400 and 450 degrees per second (d/s) Muscle cross sectional area (cm^2) was estimated using an equation derived from skinfold and circumference measurements Strength was expressed as peak torque per cm^2 of the quadriceps Below are the results of Pearson product moment correlations between variables (* $p<0.05$)

	GET	LL
180 d/s	68 *	55 *
240	65 *	58 *
300	75 *	65 *
360	76 *	62 *
400	76 *	63 *
450	71 *	57 *

These results demonstrate a positive correlation between lower limb anthropometries and peak torque per cm^2 of the knee extensors This suggests that individuals with heavier and longer limbs may possess an advantage during strength testing Therefore, consideration should be given to limb length and limb weight when comparing peak torque results of an isokinetic knee extension test.