



ACSM/DOD Conference

Prevention of EHI

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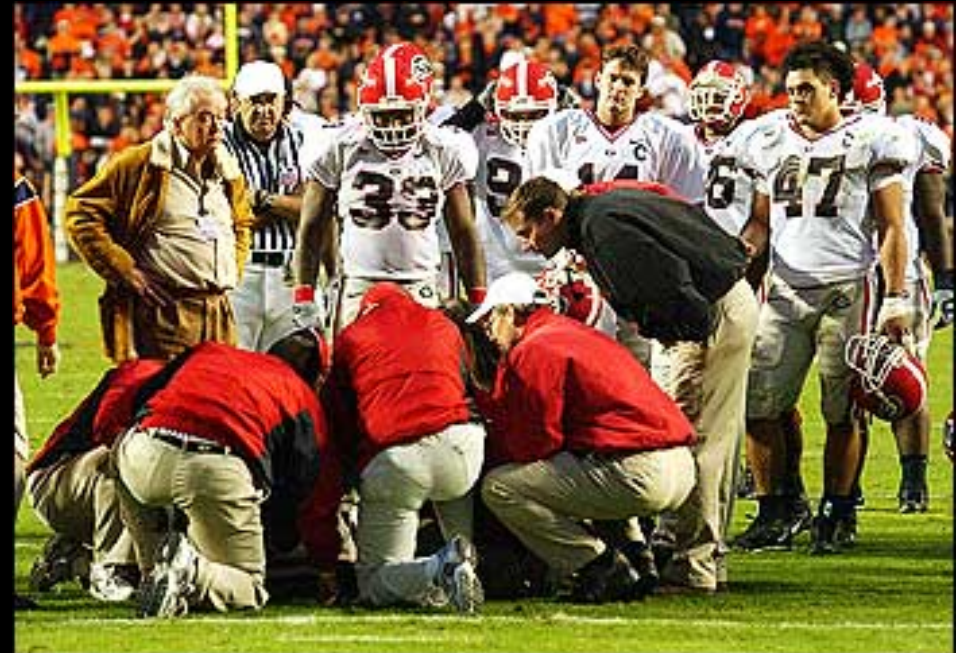


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Goals

- EHI Factors
 - Cumulative Effect
 - Role of the Environment - WBGT
- Clinical Implications



NCAA Regulations - 2003



- Five-day acclimatization period for all football athletes.
 - Only one on-field practice per day during the first five days.
 - Days 1 and 2: helmets.
 - Days 3 and 4: helmets and shoulder pads.
 - Day 5: full pads.



NCAA Regulations - 2003

- Day 6 and on: full pads, but must alternate single and double session days
 - Maximum of three hours of on-field practice on single session days
 - Maximum of five hours daily on multiple session days.
 - On multiple session days, three hour recovery must separate sessions. Team meetings not allowed during this time.



Participation by Region





When do EHI Occur?

Practice Days	All EHI Cases	Heat Exhaustion
1-5 days	39%	31%
1-10 days	61%	61%
1-16 days	75%	78%
1-24 days	85%	86%



Overall Injury Rates

EHF	Total
Heat Cramps	489
Heat Exhaustion	166
Total	655
No. Exposures	449578
Injury Rate/1000 AE	1.46
Heat Exhaustion Injury Rate	0.37

No Reported Exertional Heat Strokes

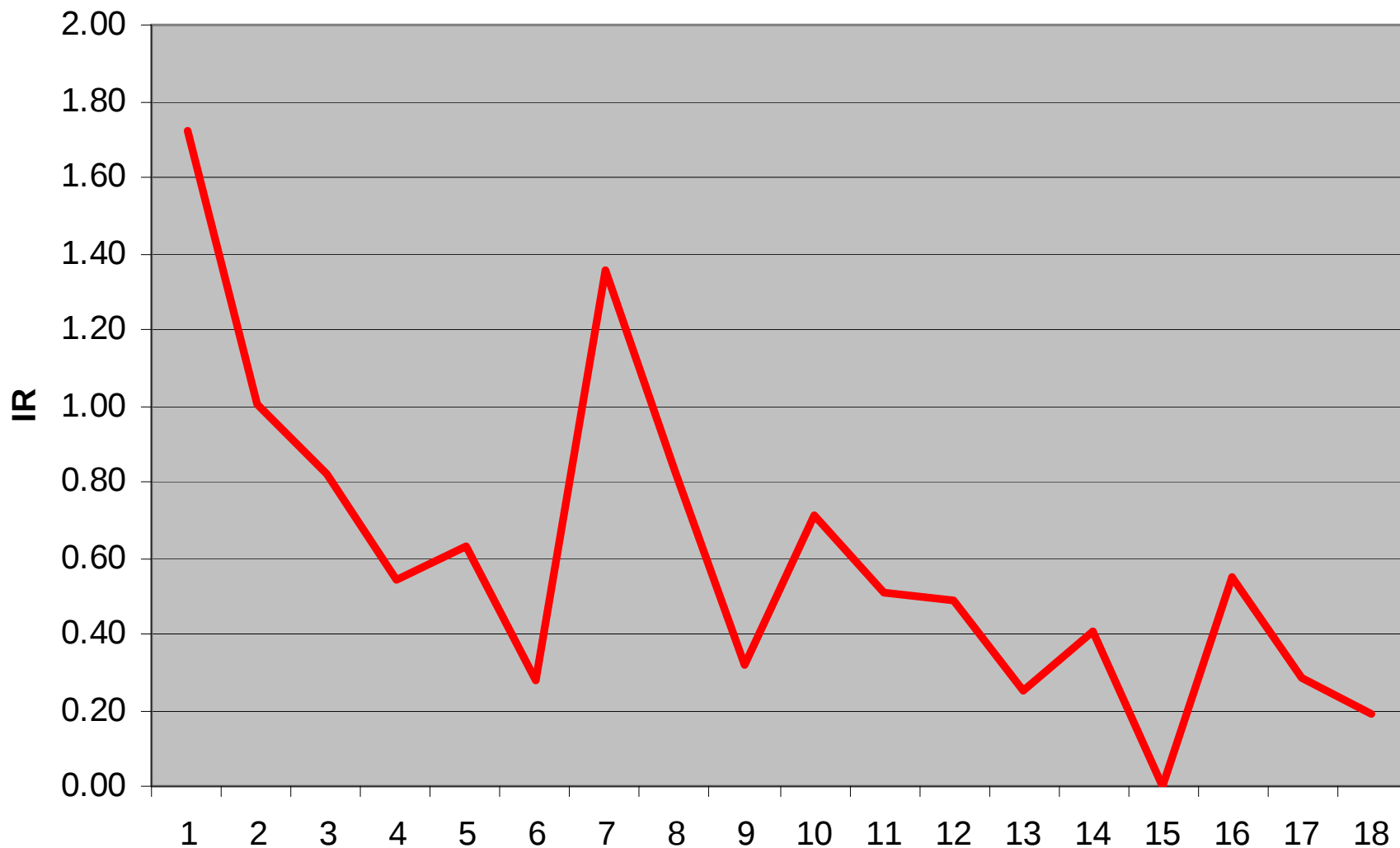


Injury Rate by Region

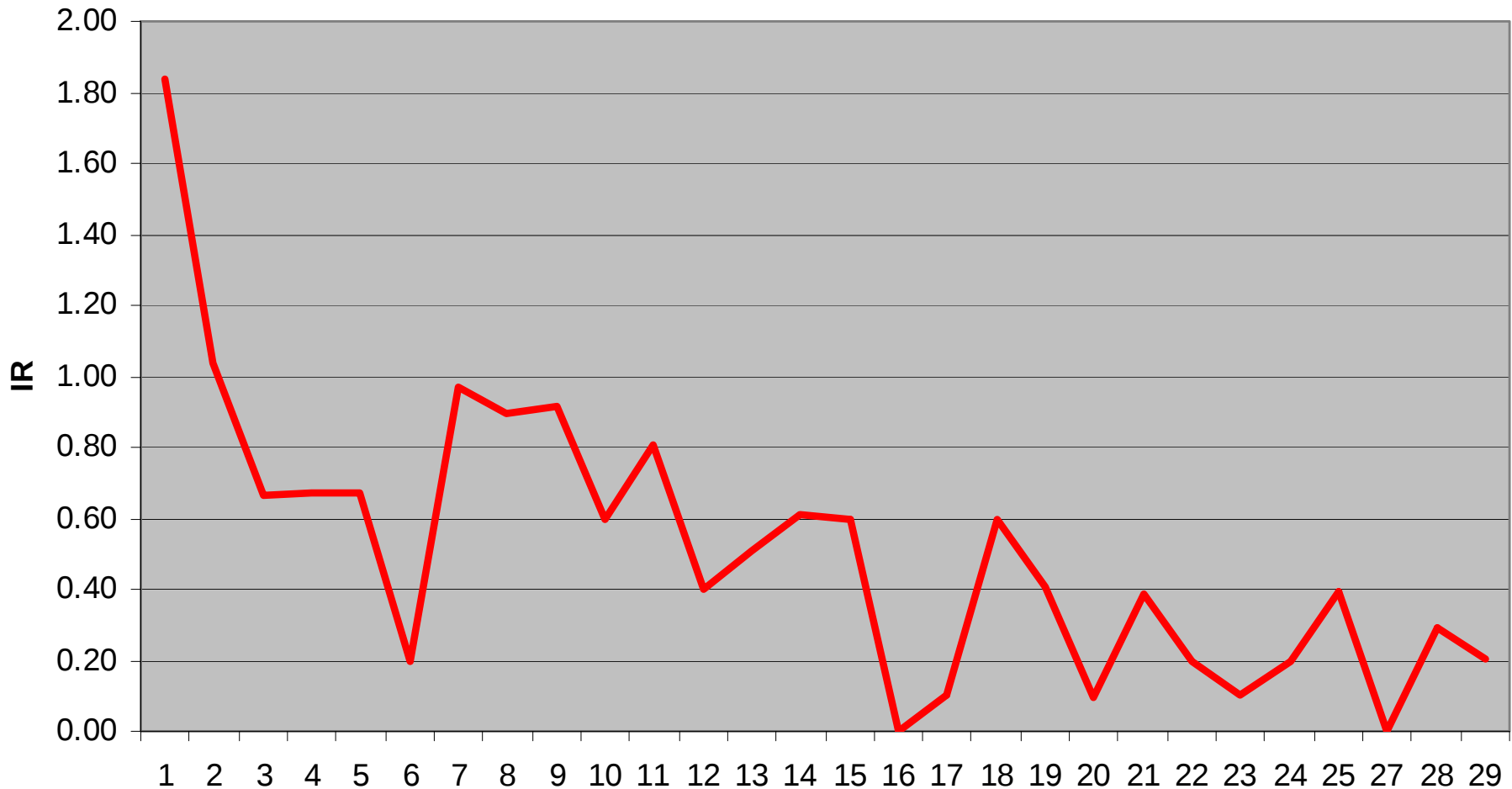
Region	Heat Cramps	Heat Exhaustion	Total	Exposures	Injury Rate
NE	27	17	44	74896	0.59
SE	397	116	513	166898	3.07
UMW	29	14	43	64075	0.67
LMW	21	15	36	55539	0.65
NW	13	4	27	67186	0.25
SW	2	0	2	20984	0.10
Total	489	166	655	449578	1.46

Injury Rate by Practice Day

Heat Exhaustion

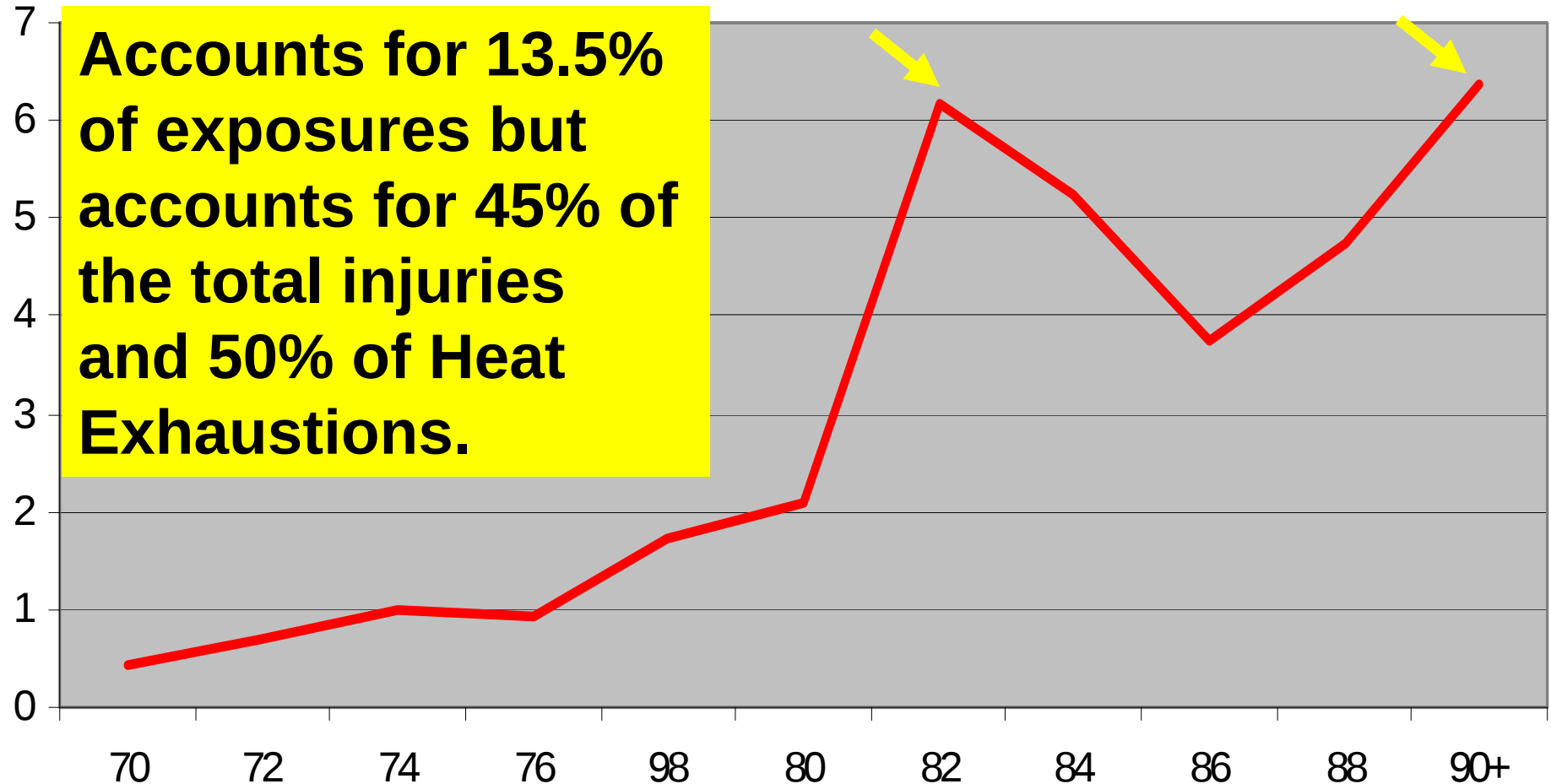


Injury Rate by Pre-Season Session Number- Heat Exhaustion



Injury Rate by WBGT

All Cases





Revised ACSM Scale, 2007

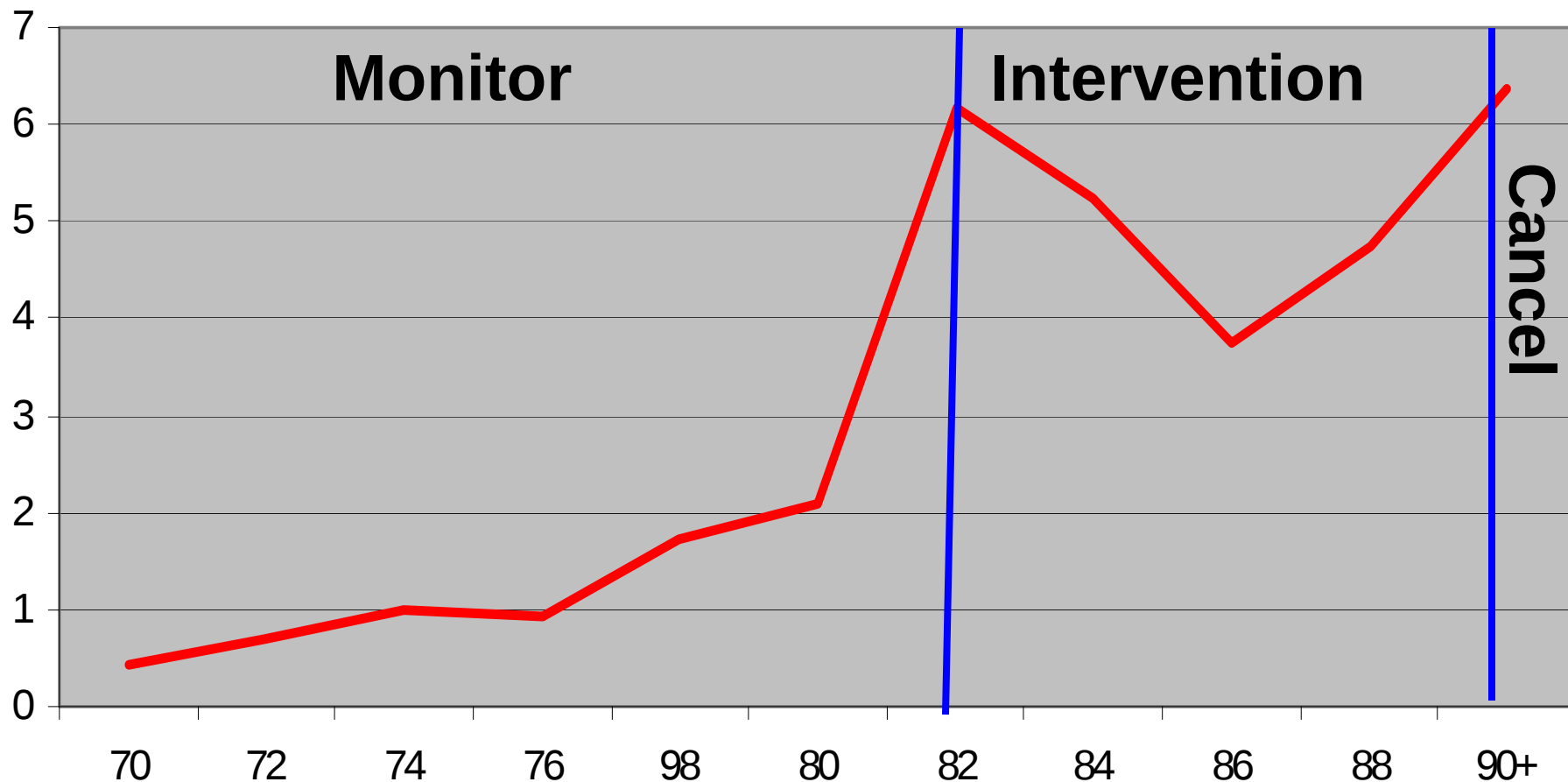
WBGT

Acclimated

<82°	Normal activity, monitor fluid intake
82.1°-86°	Plan intense or prolonged exercise with discretion, watch at-risk individuals
86.1°-90°	Limit intense exercise and total exposure to heat and humidity. Watch for early S&S of EHI
>90°	Cancel exercise, uncompensable heat stress exists for athletes.

Injury Rate by WBGT

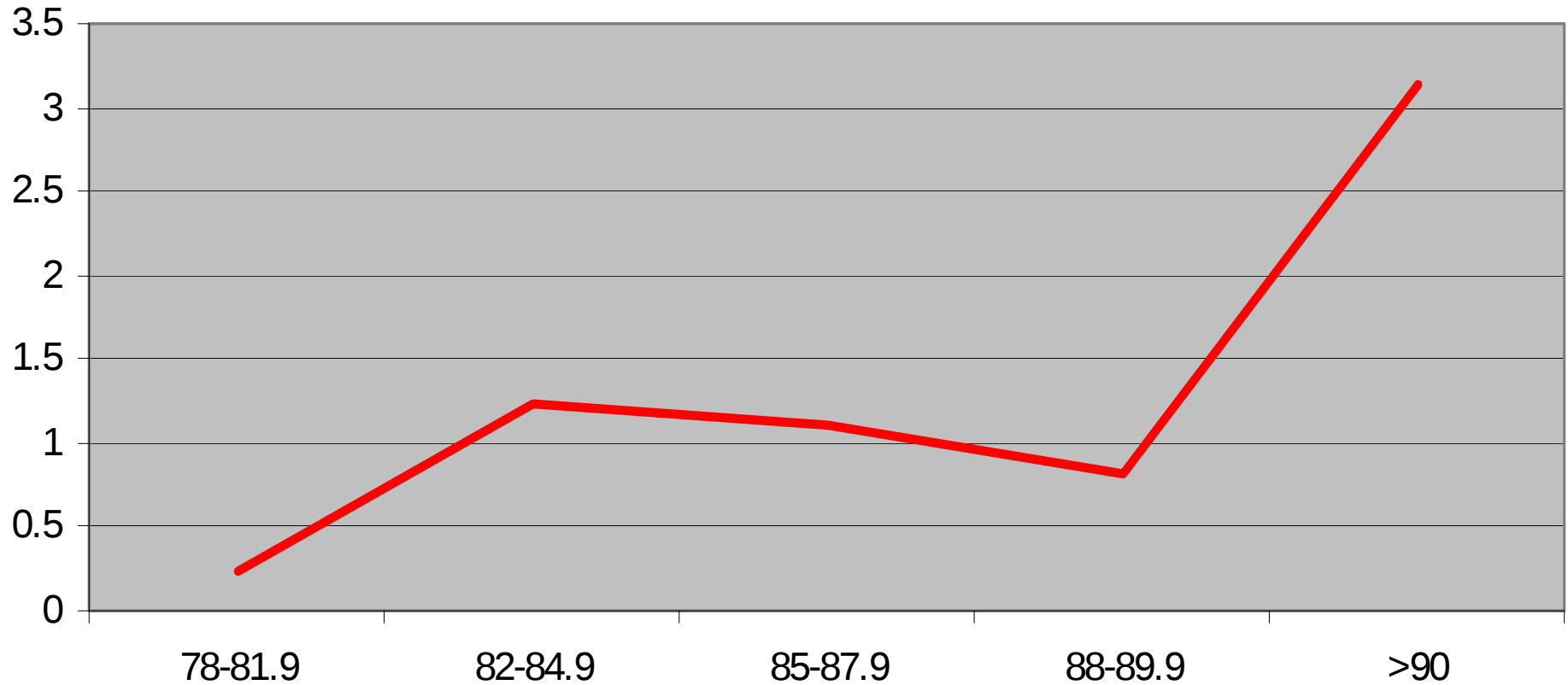
All Cases



Injury Rate by Work:Rest Guide



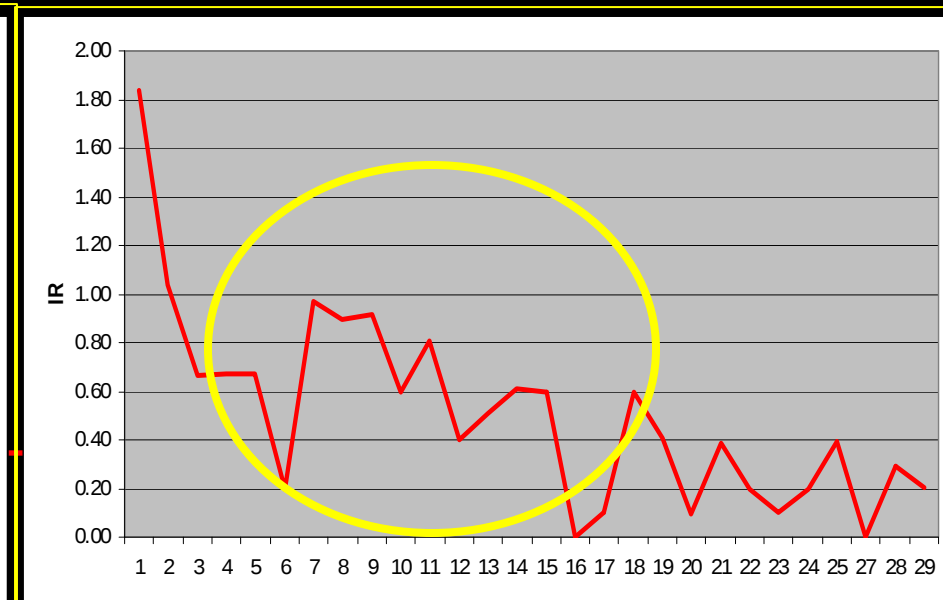
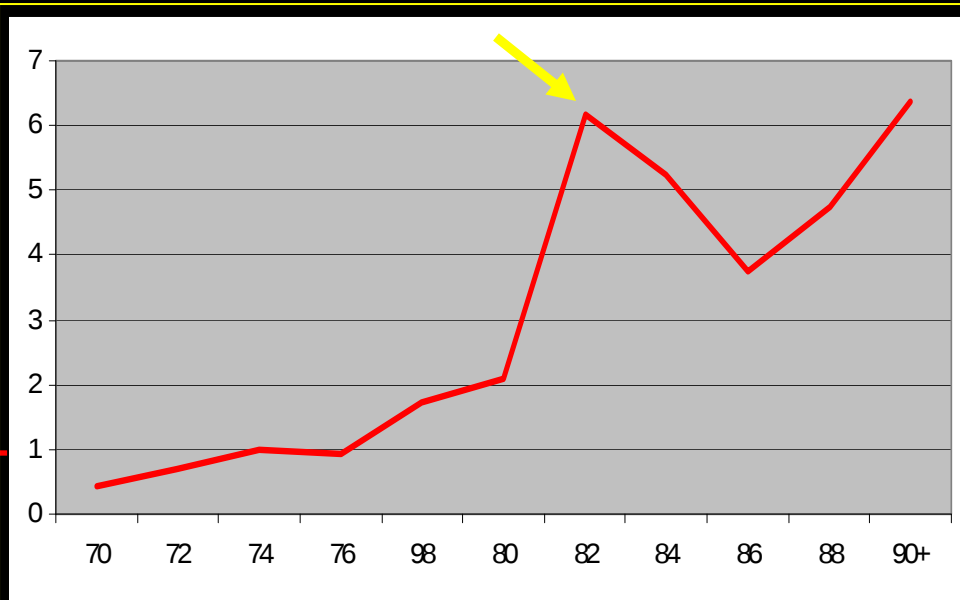
HE Rate





EHI Prevention - Environment

- EHI risk increases at:
 - ~82°F WBGT
 - Risk of EHI rises exponentially as the WBGT increases
- Cumulative Risks





Common Sense

- Fitness Level
- Acclimatization
- Overachiever
- Supplements
- Nutrition
- General Medical Condition
- Sickle Cell Trait
- Weight Loss



THANK YOU



ST. MARY'S ATHLETIC TRAINING EDUCATION AND RESEARCH LABORATORY