EATING BEFORE SWIMMING

BACKGROUND
There is a longstanding advice that one should wait after eating before swimming. Often an hour of wait is recommended. This review is conducted to evaluate the evidence that eating is a risk factor for drowning and that waiting to swim after eating will decrease this risk.

Question
Is there evidence that persons who have eaten recently have increased risk (over that of the general population) to participate in bathing, recreation, instruction and competition on and in-water activity?

STATEMENT
There is no evidence that eating before swimming increases risk for drowning. While eating has been associated with nausea, vomiting, and abdominal pain, the causal relationship between these phenomena and drowning risk has not been reported nor well studied. Therefore, recommendations on amounts, timing, and food type when eating prior to swimming or water activities cannot be based on scientific evidence.

LITERATURE REVIEW
Conducted by Dr Linda Quan MD December 2013
- Databases searched included: PubMed, Ovid Medline and OldMedline, CINAHL, Cochrane Database of Systematic Reviews, UpToDate, MDConsult, JSTOR, Academic Search Complete, Google Scholar, Google Books, Google Web Search, ERIC, SPORTDiscus, and Physical Education Index.
- Dates searched for publications from 1960 to the present (October, 2013)
- Keywords used included:
  - Drowning, Drown, Drowned, Near drowning,
  - Swim, swimming, swam
  - Eat, eating, ate
  - Meal, nutrients, nutrition,
  - Digest, digested, digestion
LEVEL OF EVIDENCE

For each article/source from step 1, assigned a level of evidence—based on study design and methodology.

<table>
<thead>
<tr>
<th>Level of Evidence</th>
<th>Definitions (See manuscript for full details)</th>
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<tbody>
<tr>
<td>Level 1</td>
<td>Randomized clinical trials or meta-analyses of multiple clinical trials with substantial treatment effects</td>
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<tr>
<td>Level 2</td>
<td>Randomized clinical trials with smaller or less significant treatment effects</td>
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<tr>
<td>Level 3</td>
<td>Prospective, controlled, non-randomized, cohort studies</td>
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<tr>
<td>Level 4</td>
<td>Historic, non-randomized, cohort or case-control studies</td>
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<tr>
<td>Level 5</td>
<td>Case series: patients compiled in serial fashion, lacking a control group</td>
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<td>Level 6</td>
<td>Animal studies or mechanical model studies</td>
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<tr>
<td>Level 7</td>
<td>Extrapolations from existing data collected for other purposes, theoretical analyses</td>
</tr>
<tr>
<td>Level 8</td>
<td>Rational conjecture (common sense); common practices accepted before evidence-based guidelines</td>
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REFERENCES

Published, refereed journal articles

Quan’s comments/Level of Evidence (LOE)


No abdominal pain at ½, 1, 2 hours post eating large meal pre competition in swimmers. LOE 3


No abdominal pain/cramp in fed and non-fed swimmers. LOE 3

3. Ball J. Effect of eating at various times on subsequent performances in swimming.

No cramps/pain/difference in swimming 1,2, etc hours after eating. LOE 3


Review of lit: Pre-exercise ingestion of foods rich in dietary fibre, fat and protein, as well as strongly hypertonic drinks, may cause upper GI symptoms such as stomach ache, vomiting and reflux or heartburn abd pain but not distress with exercise.


Describes high frequency of food contents in drowning victims which is higher than frequency in suicide victims. While this is only study attempting to evaluate relationship between eating and
Key organisations’ drowning prevention/water safety recommendations did not describe dangers of nor prescribe any warnings regarding eating and swimming/water activities:


Websites [Accessed December 5, 2013].

- [www.dukehealth.org](http://www.dukehealth.org): Myth or Fact: Wait 30 minutes after eating to go swimming
Eating Before Swimming

The Claim: Never Swim After Eating Top of Form

http://www.nytimes.com/2005/06/28/health/28real.html?_r=0
REALLY?

http://www.mayoclinic.com/health/childrens-health/CC00003. Children's swimming: Keep health risks at bay. "It's OK to swim immediately after a light meal or snack. If your child feels lethargic after eating a heavy meal, encourage him or her to take a break before swimming."

BBC. Medical Myths Should you wait an hour after eating until swimming?

SUMMARY

There is little published scientific literature or even general information on the effects of eating before swimming. The two swim studies, both conducted in the 1960’s, showed no effect on swimming performance and minimal side effects at several different time intervals after a meal. No reported cases of eating before swimming causing or contributing to fatal or nonfatal drowning are reported in any of the literature searched.

Research generally shows that food consumption prior and during athletic endeavors improves performance. However, there is a small body of research on a condition called ETAP, exercise related transient abdominal pain which is mostly reported among runners and is not debilitating nor severe. Evaluation of liquid and food intake shows that the condition may occur more frequently in runners who consumed high carbohydrate drinks. No significant symptoms were reported in any of the studies.

No research, major medical or water safety organizations make any recommendations to wait before swimming after eating.

RECOMMENDATIONS

Food intake restrictions prior to swimming are unfounded. Class II Recommendation

Class of Recommendation selected from these summary definitions.

<table>
<thead>
<tr>
<th>CLASS</th>
<th>CLINICAL DEFINITION</th>
<th>REQUIRED LEVEL OF EVIDENCE</th>
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</table>
| **Class I** | Definitely recommended.  
Definitive, excellent evidence provides support.  
• Always acceptable, safe  
• Definitely useful  
• Proven in both efficacy & effectiveness  
• Must be used in the intended manner for proper clinical indications. | • One or more Level 1 studies are present (with rare exceptions)  
• Study results consistently positive and compelling |
| **Class II:** Acceptable and useful | • Safe, acceptable  
• Clinically useful  
• Not yet confirmed definitively | • Most evidence is positive  
• Level 1 studies are absent, or inconsistent, or lack power  
• No evidence of harm |
| • **Class IIa:** Acceptable and useful  
Good evidence provides | • Safe, acceptable  
• Clinically useful  
• Considered treatments of | • Generally higher levels of evidence  
• Results are consistently positive |
<table>
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<tr>
<th>Class</th>
<th>Support</th>
<th>Choice</th>
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<tr>
<td><strong>Class IIb</strong></td>
<td>Fair evidence provides support</td>
<td>• Safe, acceptable&lt;br&gt;• Clinically useful&lt;br&gt;• Considered optional or alternative treatments&lt;br&gt;• Generally lower or intermediate levels of evidence&lt;br&gt;• Generally, but not consistently, positive results</td>
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<td><strong>Class III</strong></td>
<td>Unacceptable&lt;br&gt;Not useful clinically&lt;br&gt;May be harmful.</td>
<td>No positive high level data&lt;br&gt;Some studies suggest or confirm harm.</td>
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<tr>
<td><strong>Indeterminate</strong></td>
<td>Research just getting started.&lt;br&gt;Continuing area of research&lt;br&gt;No recommendations until further research</td>
<td>Minimal evidence is available&lt;br&gt;Higher studies in progress&lt;br&gt;Results inconsistent, contradictory&lt;br&gt;Results not compelling</td>
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**POTENTIAL CONFLICT OF INTEREST STATEMENT:**

The author has no conflict of interest with the stakeholder industry, technology, persons or organisations that are identified and/or impacted by the position statement.

**APPROVAL**

Position Statement approved by the ILS Board of Directors on 16/09/2014.