

A runner wearing a white t-shirt with a 'Herly's' logo and a cap is drinking from a MoN water bottle. The background is a scenic landscape with mountains and a road. The text 'NUTRITION IN RUNNING' is overlaid in the center.

# NUTRITION IN RUNNING



# NUTRITIONAL BASICS



First of all, when it comes to nutrition for runners, it naturally **depends on what goal you have set for yourself**: For example, casual jogging, 800m sprint, 10km race or marathon.

In general, you should **rely on carbohydrates as your first source of energy**. They provide you with the necessary power for your training session or competition. **Depending on the length and intensity of your session/race, you will logically consume more or less carbohydrates.**

In addition to the amount, the **form of carbohydrates** (well-tolerated and proven carbs) **is also an important factor**. Because especially during running, gastrointestinal problems can occur due to the impact movements – you should avoid this at all costs! Therefore, **natural products are to be preferred.**

Another tip is to **avoid high amounts of fats, proteins and fiber** (e.g., legumes or a bulky salad should not be on the menu). Also the consumption of lactose before competitions did not prove to be optimal.

Note: If you are running for less than an hour, you do not need to worry about energy intake during the run. On the other hand, if you are running for much longer, you should add energy to avoid completely depleting your glycogen stores.

The **first 15 to 45 minutes are extremely important for optimal recovery** (especially after intensive units/competitions): In the so-called „**open window**“ the muscle cell is particularly open to glucose and amino acids. Make sure you take advantage of this!

Foods you should avoid before a competition	Foods that support your performance
<ul style="list-style-type: none"><li>• Hopscotch fruits</li><li>• Lettuce</li><li>• Generally high amounts of fats, proteins as well as fiber</li></ul>	<ul style="list-style-type: none"><li>• Potatos</li><li>• Pasta</li><li>• Rice</li><li>• Porridge</li><li>• Fruits like mango or bananas</li></ul> <p>In general, you should eat easily digestible, natural foods that do not put unnecessary strain on your stomach. Particularly when running, stomach problems can quickly appear due to the push-up movement.</p>

# NUTRITION ENDURANCE UNIT



General Info	Before Training	During Training	After Training
<p><b>Training goals:</b> Improvement of fat metabolism/ decrease VLamax</p> <p><b>Training method:</b> Continuous, alternating method</p> <p><b>Intensity:</b> Low</p> <p><b>Duration:</b> Medium – long</p> <p>Example units:</p> <ul style="list-style-type: none"> <li>• Easy run</li> <li>• „Train Low“: E.g. fasting training in the morning or depleted glycogen stores due to pre-load of a previous training session</li> </ul>	<p><b>Basic consideration:</b> A requirement for effective training of fat metabolism is intensity control (avoidance of high intensities)</p> <p><b>Nutrition:</b> Carbohydrate-moderate meal 2-3h before exercise, possibly increased protein content</p> <p><b>Example:</b></p> <ul style="list-style-type: none"> <li>• E.g. muesli with yogurt/quark, salmon with baked vegetables and 1 sweet potato</li> </ul>	<p><b>Basic consideration:</b> Due to the lower intensity (up to FatMax range), primarily free fatty acids are used as energy sources, yet carbohydrates are also burned at the same time</p> <p><b>Fueling:</b> Supply slow carbohydrates during exercise to avoid a too high energy deficit and to use positive effects of fat metabolism training optimally. Later, insulin effects are to be neglected and more concentrated, faster carbohydrates are recommended</p> <p><b>Example:</b></p> <ul style="list-style-type: none"> <li>• 30-35g/h <u>SLOW CARB</u></li> </ul> <p><b>Note: For exercise periods over 2h</b></p> <ul style="list-style-type: none"> <li>• <u>POWER CARB</u> after 1/3 to 1/2 of the total load time, because here higher dosage is possible (60-80g/h) or 1-2 <u>GEL 40</u> (depending on the amount of carbohydrates you also take in through drinks).</li> <li>• Additional energy demand can be covered by <u>PORRIDGE BARS</u>, for very long sessions also <u>PROTEIN BARS</u></li> </ul>	<p><b>Basic Considerations</b></p> <p>REFUEL (carbohydrate intake) = Replenishment of depleted glycogen stores</p> <p>REBUILD (protein intake) = support of the regeneration of the stressed muscles</p> <p>REHYDRATE (fluid intake) = Compensate for water and electrolyte losses due to sweating</p> <p><b>Nutrition:</b> Combination of high-quality carbohydrates and proteins</p> <p><b>Example:</b></p> <ul style="list-style-type: none"> <li>• Within 30min after load: 30-40g <u>RECOVERY SHAKE</u> + 5 apricots or dates</li> </ul> <p><b>Follow-up:</b></p> <ul style="list-style-type: none"> <li>• Carbohydrate-rich food within 2h after loading + protective substances through fruits &amp; vegetables</li> <li>• E.g. couscous salad, pasta, feta</li> </ul>

# NUTRITION INTENSIVE UNIT



General Info	Before Training	During Training	After Training
<p><b>Training goals:</b> Improvement of the carbohydrate exchange/increase VO2max</p> <p><b>Training Method:</b> Interval, repetitive, competitive method</p> <p><b>Intensity:</b> Medium – intensive</p> <p><b>Duration:</b> Medium</p> <p><b>Example units:</b></p> <ul style="list-style-type: none"> <li>• Intervals, e.g. 4x2000m</li> <li>• Competition specific unit e.g. tempo run</li> </ul>	<p><b>Basic consideration:</b> A requirement for an intense training session is filled glycogen stores</p> <p><i>Note: Filling up the carbohydrate stores takes time. If an intensive session is scheduled for the next day, it is recommended to eat a carbohydrate-rich meal the evening before</i></p> <p><b>Nutrition:</b></p> <ul style="list-style-type: none"> <li>• Carbohydrate-rich meal 3h before exercising</li> <li>• Allow sufficient time before the session as intensive running causes stress on the gastrointestinal tract</li> </ul> <p><b>Example:</b></p> <ul style="list-style-type: none"> <li>• E.g. Overnight Oats, bread with almond butter + banana</li> </ul>	<p><b>Basic Consideration:</b> Exponential carbohydrate consumption when training around or above threshold range</p> <p><b>Fueling:</b> Supply of rapidly available carbohydrates to avoid the body having to rely on the third source of energy, proteins</p> <p><b>Example:</b></p> <ul style="list-style-type: none"> <li>• 40g/h <u>FAST CARB</u> or at higher/ longer exertion 60-70g/h <u>POWER CARB</u> or 1-2 <u>GEL 40</u> (depending on depending on the amount of carbohydrates you take in through drinks)</li> <li>• For „train-the-gut“ workouts the amount of carbs can be increased up to 80g/h (the digestive tract has to be trained to potentially higher carbohydrate intakes in competition)</li> <li>• For example, 1x per week a carbs supply of up to 80g/h</li> </ul>	<p><b>Basic consideration:</b> REBUILD - REFUEL - REHYDRATE</p> <p><i>OPEN WINDOW EFFECT: Increased sensitivity towards infections after intense exercise + improved absorption of nutrients = immediate supply of proteins and carbohydrates after the end of exercise</i></p> <p><b>Nutrition:</b> Combination of high-quality carbohydrates and proteins</p> <p><b>Example:</b> Within 30min after end of load:</p> <ul style="list-style-type: none"> <li>• 30-40g <u>RECOVERY SHAKE</u> + 5 apricots or dates</li> <li>• Additionally after particularly intensive units: 40-50g <u>RECOVERY 8</u></li> </ul> <p><b>Follow-up:</b></p> <ul style="list-style-type: none"> <li>• Carbohydrate-rich food within 2h after exercising + protective substances through fruits &amp; vegetables</li> <li>• E.g. vegetable curry with rice</li> </ul>

# NUTRITION SHORT DISTANCES (5KM, 10KM...)



Before Competition	During Competition	After Competition
<p><b>Basic consideration:</b> Requirements for optimal performance in competition are filled glycogen stores</p> <p><b>Nutrition:</b> 2-3h before the start last meal: High carbohydrate, low fiber and low fat</p> <p><b>Example:</b> Breakfast: bread roll with honey, spelt bread with banana</p>	<p><b>Basic consideration:</b> For short periods of exertion, the body does not need an additional energy supply during the run</p> <p><b>But:</b> Good preparation and follow-up of the intensive load are especially important here!</p> <p><b>Fueling:</b> No supply necessary</p>	<p><b>Basic consideration:</b> After the end of stress, it is important to supply the body with high-quality energy sources and thus actively promote the regeneration processes</p> <p><b>Nutrition:</b> Post-load supply of high value protein source &amp; complex carbohydrates</p> <p><b>Example:</b> Within 30min:  <ul style="list-style-type: none"> <li>• 40-50g RECOVERY 8</li> </ul>                     Within 60-90min:  <ul style="list-style-type: none"> <li>• 30-40g RECOVERY SHAKE + 5 dates</li> </ul> </p> <p><b>Follow-up:</b></p> <ul style="list-style-type: none"> <li>• High carbohydrate food</li> <li>• E.g. rice or noodle pan, kefir/natural yogurt, chickpeas, feta cheese</li> </ul>

# NUTRITION LONGER DISTANCES (HALF MARATHON, MARATHON)



Before Competition	During Competition	After Competition
<p><b>Basic consideration:</b> Requirements for optimal performance in competitions are filled glycogen stores</p> <p><b>Nutrition:</b> <u>CARBOLOADING</u></p> <ul style="list-style-type: none"> <li>• 2-3h before the start last meal: carbohydrate-rich, low fiber and fat, small protein addition</li> </ul> <p><b>Example:</b> Breakfast: e.g. bread roll with honey spelt bread with almond paste and banana</p>	<p><b>Basic Consideration:</b> For long duration competitions, the body needs a constant &amp; well tolerated source of energy</p> <p><b>Fueling:</b> Supply of rapidly available carbohydrates, high dosage in competition</p> <p><b>Per competition hour:</b> 60-90g/h (110-170ml) <u>POWER CARB</u> or 1-2 <u>GEL 40</u> (depending on the amount of carbohydrates you also take in through drinks)</p> <p><i>Tip: Individual supplies can be positioned at designated aid stations at many events</i></p> <p><b>Other option:</b> Drink vest with small <u>RACE CARB X</u> portions + water from the aid station</p> <p><b>Fueling Half marathon</b> 4 aid stations, every 5km: 30-40g <u>POWER CARB</u> in 250ml each</p> <p><b>Fueling marathon</b> 8 aid stations, every 5km: Each 40-50g <u>POWER CARB</u> in 250ml</p> <p><b>Alternative:</b> Every 5km 40-50ml <u>RACE CARB X</u> + rinse with water from the aid station</p>	<p><b>Basic consideration:</b> After the competition, it is important to supply the body with high-quality energy sources and thus actively promote the regeneration processes</p> <p><b>Nutrition:</b> Post-exercise supply of high value proteins &amp; complex carbohydrate source</p> <p><b>Example:</b> Within 30min:</p> <ul style="list-style-type: none"> <li>• 40-50g <u>RECOVERY 8</u></li> </ul> <p>Within 60-90min:</p> <ul style="list-style-type: none"> <li>• 30-40g <u>RECOVERY SHAKE</u> + 5 dates</li> </ul> <p><b>Follow-up</b></p> <ul style="list-style-type: none"> <li>• High carbohydrate food + protein source</li> <li>• E.g. potatoes with vegetables, pasta + parmesan or feta</li> </ul>

# FINAL TIPS



## General nutrition tips for runners

- Use mainly carbohydrates as an energy source – the amount always depends on the length and intensity of your session or race form
- To counteract gastrointestinal problems, use the „train the gut“ method and avoid large amounts of fats, proteins and fiber before training/competition
- Use the „open window“
- If you are running for less than an hour, food is not necessary

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