

**CANADIAN
SPORT
INSTITUTE**



ONTARIO

**INSTITUT
CANADIEN
DU SPORT**



PROUD MEMBER OF THE
SPORT INSTITUTE NETWORK

Tools, Tips & Tricks for Para-Friendly Cooking

Christine St. Clair, RD &
Sydney Lougheed, Dietetic Intern
Canadian Sport Institute

Agenda

- Day-to-Day Considerations
- Kitchen Tools & Tips
- DEMO: 2 Recipes
- Athlete “Training Day”
- Wrap Up / Sample Recipes

What are day-to-day realities our para-athletes face that could negatively affect their health or performance?



Day-to-Day Considerations

- Require more time for ADLs
 - Showering/getting ready
 - Meal prep/cooking
 - Toileting, bowel management routine
 - Equipment transfer requires more organization, time
- Additional muscular force and EE for ambulation



Fisher et al. 1978; Lynch et al. 2015; Fradet et al. 2011;
van Drongelens et al. 2005a; van Drongelen et al. 2005b

Day-to-Day Considerations

- Athlete life
 - Busy schedules (school, work, training, travel)
 - Require on-the-go meals/snacks
- GI stress
 - Meal timing prior to exercise
 - Fat/fibre
- Hydration
 - Travel / Competition
 - Catheters, UTI's



Wijck, et al. 2011; Rehrer, et al. 1992; Radulovic, et al., 2015;
Cruz et al. 2011; Hanson et al. 2010; Tai et al. 2009; Wilde, et al. 2017

Adapted Tools

- Cooking Supplies for Para-Friendly Kitchen



DEMO TIME!



Pumpkin Chocolate Energy Bites

- No-bake recipe, mix all in bowl
- Before, during or after training
- Add protein (ex. Sport certified protein powder)



Nutrition per serving:

Per 1 bite: 156 calories, 8g fat, 19g carbohydrate (2g fibre), 4 g protein

Berry Smoothie On-The-Go

- Simple, portable breakfast
- Easier on the gut for pre-competition jitters
- Or use as recovery snack
- Pre-portion individual baggies/containers

Nutrition per serving:

358 kcal; 58g carbohydrate; 27g protein;
2g fat



Louise's Secret Lasagna

- Simple recipe, no chopping
- Freezer friendly - great for leftovers
- Ingredient swap: Tuna, salmon, ground turkey or chicken, legumes and other vegetables

Nutrition per svg: 447 kcal, 42 g carbohydrate (6g fibre), 37 g protein, 16 g fat



Crockpot Curry

- Freeze easy, minimal chopping
- Add salad for balance
- Adjustable carb

Nutrition per svg:
327 kcal, 37 g carbohydrate, 5 g fibre, 32 g protein, 8 g fat

A Typical Training Day

TIME	ACTIVITY	MEAL PLAN
	Evening prior	5 minutes of prep
8:30 AM	Depart for training	Blend smoothie/ turn on crockpot
10:00AM-12:00PM	On-court practice	Sips of water and/or sports drink, energy bites
12:15 PM	Lunch/Recovery	Lasagne square, piece of fruit, sips of fluid
2:00PM-3:00PM	S&C session	Sips of water
	Cool down/ depart home	Recovery snack
6:00PM	Dinner	Crockpot curry, mixed green salad, sips of water
	Eve snack	2 energy bites and cup of milk

Wrap Up

- Be aware of ADL's that might impact your athlete's health/performance
- Many adapted tools exist to help simplify cooking and meal prep
- Cooking can be FUN, save time & money in the long run
- Planning goes a long way!
 - Prepare, pack & carry meals, snacks, fluids



THANK YOU!

**Special thanks to Liz Broad for her
input & ideas!**

Christine St. Clair, RD &
Sydney Lougheed, Dietetic Intern
Canadian Sport Institute



References

- Broad, E. (2014). *Sports nutrition for paralympic athletes* CRC Press, Taylor & Francis Group
- Brouns F., Saris, WHM., Rehrer, NJ. 1987. Abdominal complaints and gastrointestinal function during long-lasting exercise. *Int J Sports Med*; 8: 175-98
- Cruz, C., & Cruz, F. (2011). Spinal cord injury and bladder dysfunction: New ideas about an old problem. *The scientific world journal*, 11, 214-234. doi:10.1100/tsw.2011.26
- Fisher SV, Gullickson G Jr (1978) Energy cost of ambulation in health and disability: a literature review. *Arch Phys Med Rehabil* 59(3):124–133
- Fradet, L., Marin, F., Rasmussen, J., & Wolf, S. I. (2011). Peak forces of the rotator cuff muscles during activity of daily livings performed by a wheelchair user. *Computer Methods in Biomechanics and Biomedical Engineering*, 14(sup1), 199-201. doi:10.1080/10255842.2011.595179
- Goodman S, Lee K, Heidt F, eds. *Coaching Wheelchair athletes*. Canberra: Australian Sports Commission, 1996
- Hansen, R. B., Biering-sørensen, F., & Kristensen, J. K. (2010). Urinary incontinence in spinal cord injured individuals 10-45 years after injury. *Spinal Cord*, 48(1), 27-33. doi:<http://dx.doi.org.ezproxy.lib.ryerson.ca/10.1038/sc.2009.46>
- Lynch, M. M., McCormick, Z., Liem, B., Jacobs, G., Hwang, P., Hornby, T. G., . . . Roth, E. J. (2015). Energy cost of lower body dressing, pop-over transfers, and manual wheelchair propulsion in people with paraplegia due to motor-complete spinal cord injury. *Topics in Spinal Cord Injury Rehabilitation*, 21(2), 140-148. doi:10.1310/sci2102-14
- Perret C, Flueck JL. Supplementation and Performance in Spinal Cord-Injured Elite Athletes: a Systematic Review. *Dtsch Z Sportmed*. 2016; 67: 209-213.

References Con't

- Radulovic, M., Schilero, G. J., Yen, C., Bauman, W. A., Wecht, J. M., Ivan, A., . . . Korsten, M. A. (2015). Greatly increased prevalence of esophageal dysmotility observed in persons with spinal cord injury. *Diseases of the Esophagus*, 28(7), 699-704. doi:10.1111/dote.12272
- Rehrer, N. J., Brouns, F., Beckers, E. J., Frey, W. O., Villiger, B., Riddoch, C. J., . . . Saris, W. H. (1992). Physiological changes and gastro-intestinal symptoms as a result of ultra-endurance running. *European Journal of Applied Physiology and Occupational Physiology*, 64(1), 1-8. doi:10.1007/BF00376431
- TAI, C., & ROPPOLO, J. R. (2009). Bladder and sphincter control after spinal cord injury. *LUTS: Lower Urinary Tract Symptoms*, 1, S84-S86. doi:10.1111/j.1757-5672.2009.00038.x
- van Drongelen, S., van der Woude, L. H., Janssen, T. W., Angenot, E. L., Chadwick, E. K., & Veeger, D. H. (2005a). Mechanical load on the upper extremity during wheelchair activities. *Archives of Physical Medicine and Rehabilitation*, 86(6), 1214-1220. doi:10.1016/j.apmr.2004.09.023
- van Drongelen, S., van der Woude, L. H., Janssen, T. W., Angenot, E. L., Chadwick, E. K., & Veeger, D. H. (2005b). Glenohumeral contact forces and muscle forces evaluated in wheelchair-related activities of daily living in able-bodied subjects versus subjects with paraplegia and tetraplegia. *Archives of Physical Medicine and Rehabilitation*, 86(7), 1434-1440. doi:10.1016/j.apmr.2005.03.014.
- Wilde, M. H., McMahon, J. M., Crean, H. F., & Brasch, J. (2017). Exploring relationships of catheter-associated urinary tract infection and blockage in people with long-term indwelling urinary catheters. *Journal of Clinical Nursing*, 26(17-18), 2558-2571. doi:10.1111/jocn.13626
- Wijck, K. v., Lenaerts, K., Loon, L. J. v., Peters, W. H. M., Buurman, W. A., & Dejong, C. H. (2011). Exercise-induced splanchnic hypoperfusion results in gut dysfunction in healthy men. *Plos One*, 6(7), e22366-e22366. doi:10.1371/journal.pone.0022366

