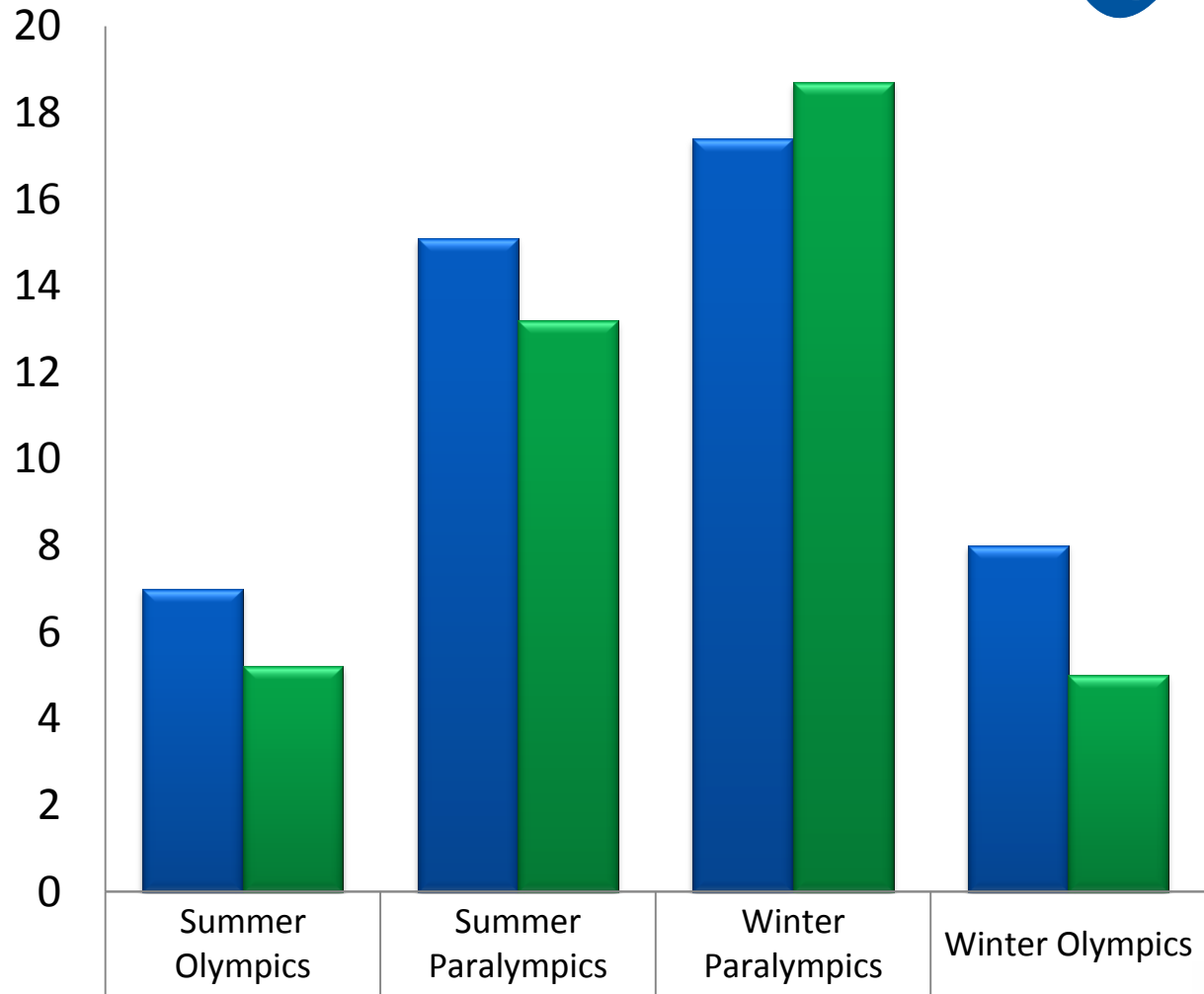
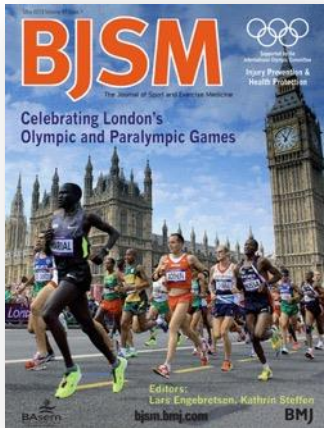


Incidence of Illness



■ Illness proportion (%)

■ Illness rate (/1000 athlete days)

Illness proportion (%)	7	15.1	17.4	8
Illness rate (/1000 athlete days)	5.2	13.2	18.7	5



Incidence of Illness

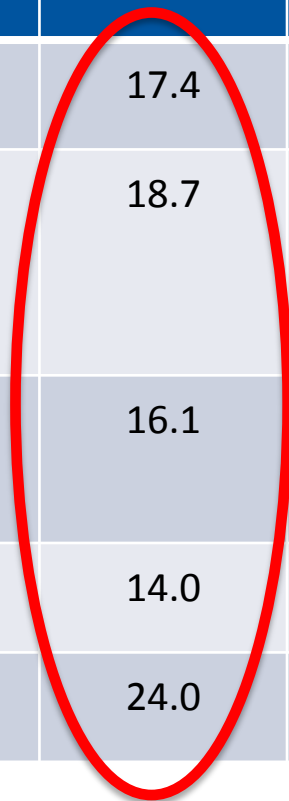
Illness 2 x more common
In Paralympians v Olympians

Winter > Summer

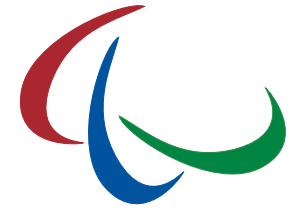
Incidence of illness by sport – Sochi Paralympics



Sport	Total number of illnesses	Athletes with an illness	Athletes	Total number of athlete days	Proportion of athletes with an illness	Illness incidence rate illnesses/1000 athlete days (95% CI)
All	123	95	547	6564	17.4	18.7 (15.1 – 23.2)
Alpine skiing/ Snowboarding	51	41	219	2628	18.7	19.4 (13.9-27.0)
Cross country skiing/biathlon	30	24	149	1788	16.1	16.8 (10.9 – 25.9)
Ice sledge hockey	30	18	129	1548	14.0	19.4 (12.6 – 29.9)
Wheelchair curling	12	12	50	600	24.0	20.0 (10.1-39.6)



Incidence of Illness by System



Physiological system	Total number of illnesses	Number of athletes with an illness	Proportion of athletes with an illness	Illness incidence rate illnesses/1000 athlete days (95% CI)
All	123	95	17.4	18.7 (15.1-23.2)
Respiratory	37	30	5.5	5.6 (3.8 – 8.0)
Eye and adnexa	18	17	3.1	2.7 (1.7 – 4.4)
Digestive system	16	14	2.6	2.4 (1.4 – 4.2)
Skin and subcutaneous	16	13	2.4	2.4 (1.3 – 4.6)
Genitourinary	8	8	1.5	1.2 (0.6 – 2.4)
Mental and brain	8	8	1.5	1.2 (0.6 – 2.4)



Incidence of Illness by System

21% of athletes reporting an illness
required one or more days of
exclusion from training or
competition

Illness Prevention – Key Issues

Address Major Risks – all athletes

- URTI
- Gastrointestinal infection
- Eye – conjunctivitis, keratitis

Para sport Specific Issues

- Urinary Tract Infection
- Skin breakdown & Infection – Residual Limb & Insensate Areas

Infection Control - Prevention



- Hand hygiene – good practices are the mainstay of minimising spread of infection.
- Hand washing helps but some products have ‘residual activity’ i.e. the effect lasts for a few hours after application – e.g. Alcohol Gels, First Defence hand foam, Byotrol - Active for 8 hours
- Encourage regular use and make available to athletes and staff





Need to be sure that
Medics are not
Spreading infection in
Non-clinical settings



Athlete Education



- Sleep - essential to recovery and immune health
- Diet - diet rich in fruit, vegetables and healthy fats to ensure a plentiful intake of micronutrients.
- Bottled water, avoid ice
- Vitamin D3 and vitamin C supplements may help prevent colds
- Consider taking zinc supplement while you have a cold
- Probiotics

Wash Your Hands

80% of all infectious diseases are transmitted by touch. If you wash your hands it reduces the risk of getting diarrhoea, by a third and respiratory illnesses, like colds by 20%.

Wash your hands and use hand foams at every opportunity, particularly after going to the toilet and before eating.

Ice Free Drinks

Ice is often made with filtered tap water - this is not considered safe and the ice machines themselves may be contaminated leading to diarrhoea and other illnesses. Avoid ice in your drinks.

Use Bottled Water

Tap water that is not properly treated may contain contaminants that can result in infection, particularly diarrhoea. Some water has enough bacteria in it to make you ill, even if you use it when brushing your teeth, by drinking bottled water and other sealed drinks, you can minimise the chance of getting ill. If you use your own water bottle make sure you clean it regularly with disinfectant (Dettol).

Follow Travel Strategy

Pyeongchang is nine hours ahead of UK time and the door to door journey may take up to 22 hours. Team members may experience symptoms of travel fatigue and jet-lag such as tiredness, irritability and disturbed sleep for up to seven days after arrival.

Follow the advised travel and jet-lag strategy to help speed your recovery from travel and adjustment to the new time zone.

Early Reporting

Infections can spread rapidly to your team mates through direct contact. As soon as you are aware you may be ill, report your symptoms early. This will help ensure you get the right treatment and your team remains healthy.

5 WINNING WAYS

ParalympicsGB

Prevention - Probiotics May Reduce Infection in Athletes

- Study of the effects of a probiotic supplement during 4/12 of winter training in men and women engaged in endurance-based physical activities on incidence of upper respiratory-tract infections (URTIs) and immune markers
- The proportion of subjects on placebo who experienced 1 or more weeks with URTI symptoms was 36% higher than those on Probiotics
- Saliva IgA concentration was higher on probiotics than placebo

LISTEN TO
YOUR GUT



Gleeson M., et al (2011) Daily probiotic (Lactobacillus casei Shirota) reduces infection incidence in athletes. International Journal of Sport Nutrition & Exercise Metabolism 21: 55-64



Probiotics: Effects on URTI and Illness - Meta-analyses



Hao et al 2015
Cochrane review

- 47% reduction of upper respiratory tract infections
- Reduction in the average duration of an acute URTI episode by 2 days



King et al 2014
meta analysis

- Lower numbers of illness days
- Shorter illness episodes
- Fewer days of absence from school or work.



Pyne et al 2015
in athletes

- 5 of 8 studies in athletes found reduced URTI frequency or fewer days of illness and 3 reported trivial or no effects.

Probiotics: Effects on URTI and Illness - Meta-analyses

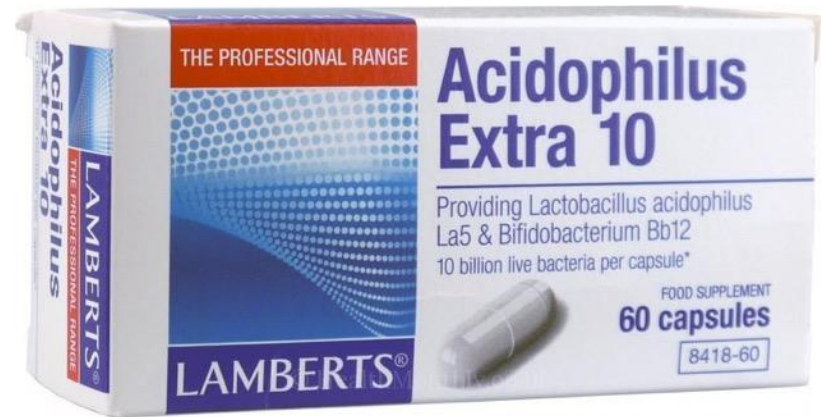


Fewer URTIs
Shorter Duration
Severity Unchanged

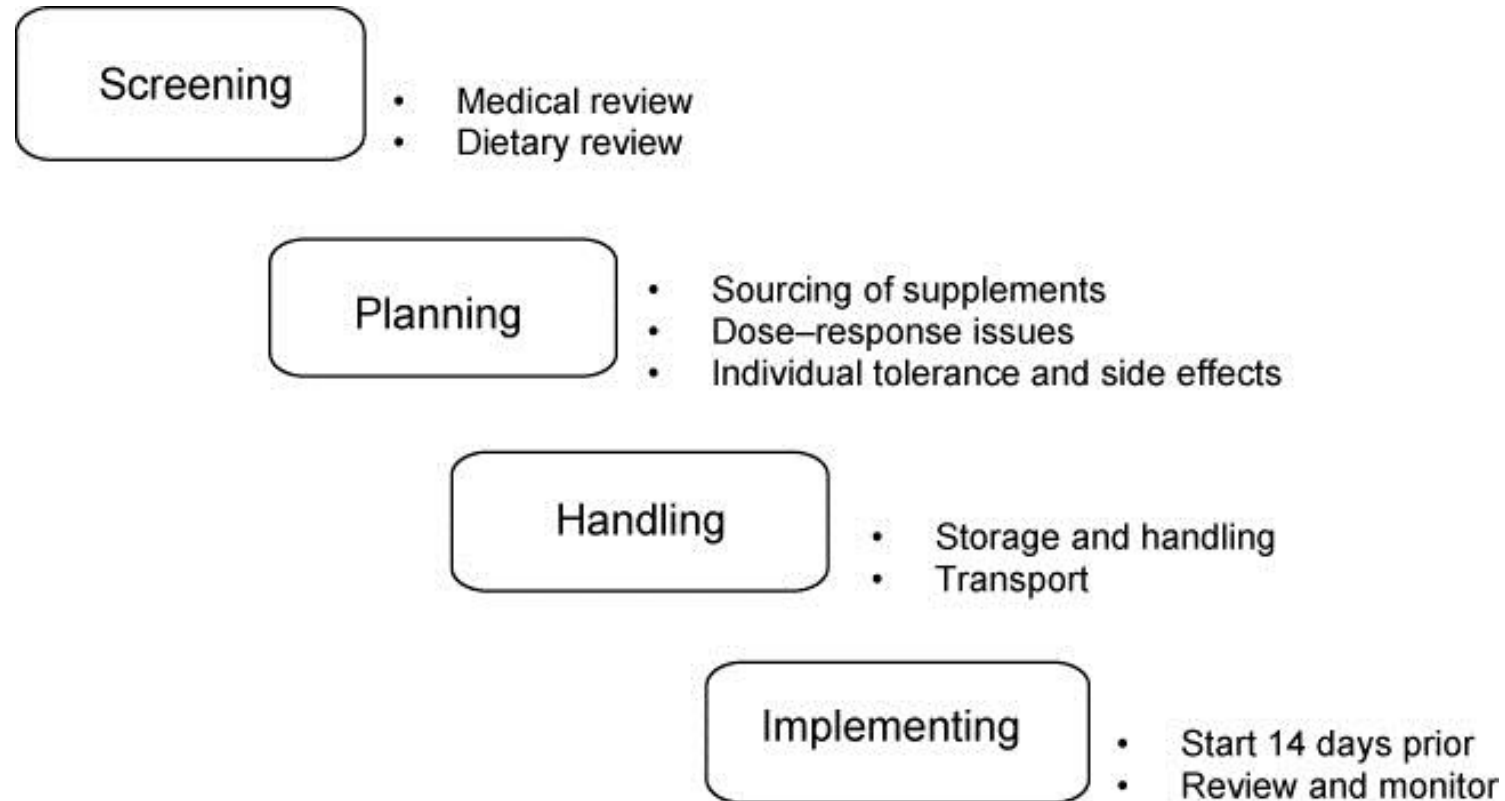
Proposed mechanisms for reducing illness in gastrointestinal and respiratory tract



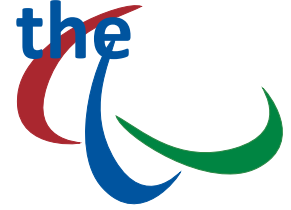
- Direct interaction with the gut microbiota
- Promotion of the integrity of the intestinal mucosa
- Interaction with the mucosal immune system
- Immune signalling to a variety of organs and systems including the liver, brain and respiratory tract



Practical issues for athletes considering the use of probiotic supplementation



Practical issues for athletes considering the use of probiotic supplementation



- Take a daily dose of probiotic containing *Lactobacillus* and/or *Bifidobacterium* species containing at least $\sim 10^{10}$ live bacteria
- Probably better than multi-strain probiotics as different strains can produce different effects which may oppose each other.
- Take the probiotic in the morning with breakfast.
- Probiotics may need to be taken for several weeks before positive health effects can be expected



Infection Risks



Environment - Close proximity living

- Room
- Apartment
- Village
 - Dining
 - Transport
- Sports Venue
- The other team!



Infection Control – Limitation



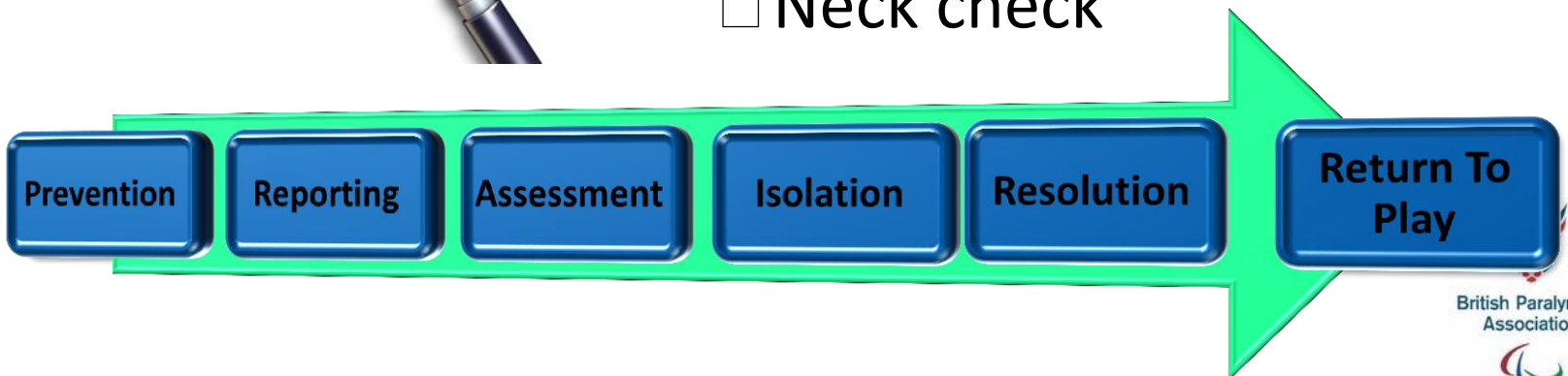
- Monitor good hygiene practices
- Early detection - encourage reporting of symptoms
- Consider early use of First Defence nasal spray or zinc lozenges (>75 mg zinc/day) for cold symptoms
- Team Specific Infection Control Policy document



Infection Control Policy



- Isolate ill athletes
- Set aside room in village
- Infection control monitoring
- RTP protocol
- Neck check



Eye Problems



- Previously unreported in sports med literature
- Increased tear evaporation - cold, altitude., air conditioning
- Under uncontrolled exposure to ultraviolet irradiation
- Or associated with URTI?

Eye Problems



Prevention

UV Eye Protection

Lubricant drops

Reduce URTI incidence

Urinary Tract Infection



- Commonest cause of *disabling* (time loss) infection in SCI athletes
- 'Hero to Zero' in hours
- Education –
 - Hydration
 - Hand hygiene

Urinary Tract Infection



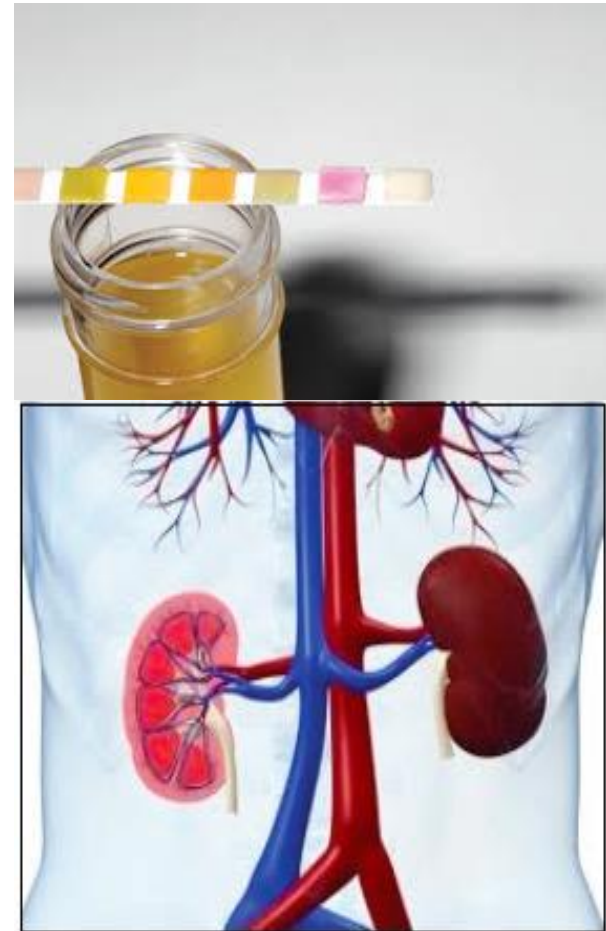
Urinary Tract Infection



Infection – Early Detection UTI



- Athletes susceptible to urinary tract infections will be offered dipstick testing on entry to camp and village and if positive sent for culture.
- Early intervention with correct antibiotics





STD Prevention



Key Points





Paralympic.org

Thank you for
your attention