Helping children and young people learn about the importance of building strong bones.

This pack contains ‘programmes on a plate’ for each BB section.

July 2016
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Introduction

During childhood and teenage years children build as much bone as possible and this is the time to **maximise their bone strength and density**! Banking bone in these early years helps reduce the risk of osteoporosis as bone density naturally deteriorates with age. If children and young people are encouraged to take plenty of exercise, eat a well-balanced calcium rich diet, and enjoy some time in the sunshine this can help build strong healthy bones.

The aim of this resource is to help children and young people learn the importance of building strong bones and how our bodies can build strong bones.

This resource pack includes ‘programmes on a plate’ for each BB section, designed to last a whole evening but activities can be tailored to suit.

Acknowledgement

The pack was produced by Northern Health and Social Care Trust personnel:

Heather Dunlop, Paediatric Dietitian

Leesa Houston, Senior Health Promotion Officer (Older people), Health & Wellbeing Team
Boost Your Bones

Activity 1: Eatwell Guide – Healthy Balanced Diet

Aim: To understand what a healthy balanced diet is.
Time: 20 minutes
Numbers: No maximum number depending on adequate supervision

Equipment:
- Picture of eatwell guide (see copy included)
- Paper plates
- Colouring pencils

Instructions:
A healthy balanced diet provides our body and bones with the vitamins, minerals and energy needed to keep us healthy.

A healthy balanced diet includes foods from the 4 main food groups
1. fruit and vegetables (one of the largest groups)
2. potatoes, bread, rice, pasta and other starchy foods (one of the largest groups)
3. dairy and alternatives
4. beans, pulses, fish, eggs, meat and other proteins

The fifth food group (smallest group) includes oil and spreads. High fat/sugar foods such as crisps, sweets and chocolate should be eaten in small amounts.

- Provide each child with a paper plate and ask them to use the colouring pencils to draw and colour their favourite meal on the plate.
- Show the children a picture of the eatwell guide (copy included). The eatwell guide shows all the different types of food that we should eat for a healthy diet.
- Highlight the five types of foods or food groups, explaining their names and the colours of the groups.
- Get the children to identify the largest and smallest food groups in the eatwell guide; these should make up the largest and smallest parts of our diet.
- Explain the blue food group is the “dairy and alternatives” food group. These foods contain lots of calcium, helping to make our bones strong. Foods in this group include milk, yoghurts and cheese. Ask the children if anyone has drawn any of these foods on their paper plate.
Activity 2: Bones!

**Aim:** To learn how to make our bones strong.

**Time:** 15 minutes

**Numbers:** No maximum number depending on adequate supervision

**Equipment**
- Small tub of jelly emptied on to a plate
- 2 sets of Jenga bricks
- Aero chocolate - enough to provide each child with a small piece
- Crunchie chocolate - enough to provide each child with a small piece

**Preparation:**
- Remove the jelly from its tub and place on a plate.
- Cut the Aero and Crunchie chocolate into small pieces.

**Instructions:**
- Show the children the jelly on a plate. Explain that our bones protect our bodies, give them shape and help us move. If we didn’t have bones our bodies would look very different and may even look like jelly.
- Divide the children into two groups and provide each group with a set of Jenga bricks. Ask each group to build a tower of Jenga bricks that are strong and unlikely to fall over.
- Highlight that it is important that we build strong bone now when we are young because our bones only become strong until our mid to late twenties.
- Ask the children if they can remember from activity 1 what foods will help make their bones strong.
- Explain that by eating milk and other dairy foods; exercising and enjoying some time in the sun this will help our bones be strong like the Jenga towers.
- Ask for a volunteer from one of the groups to remove some of the bricks from their Jenga tower so that it is weaker and more likely to fall over.
- Explain that if we don’t have enough milk and dairy foods, exercise or spend enough time in the sun our bones can become weak. If our bones are weak they are more likely to break when we are older.
- Ask for a volunteer to knock down the bricks demonstrating how weak they are.
- Provide each child with a piece of Aero chocolate and a piece of Crunchie chocolate. Ask the children to look at the chocolate closely. Explain the Crunchie chocolate has a hard centre like our bones when we eat the right foods, exercise and get enough sunlight. The Aero has big holes like our bones when we don’t eat the right foods, exercise or get enough sunlight.
Activity 3: Obstacle Course

Aim: To learn what type of exercises help to make our bones strong.

Time: 15 minutes

Numbers: 6+ No maximum number depending on adequate supervision

Equipment:
- Skipping ropes (1 per team)
- Bean Bags (1 per team)
- Balls (1 per team)
- Bucket/Waste paper bin (1 per team)
- 5 cones (per team)

Preparation:
- Set out five cones for each team equally spaced down the room.
- Place a ball and bucket/waste paper bin at the second cone.
- Place a skipping rope at the third cone.
- Place a bean bag at the fourth cone.

Instructions:
- Split the children into 2/3 teams depending on the number of children.
- Get each team to form a single line with the children lining up behind one another at a starting line.
- Explain what to do. On the word go the children should run to the first cone and do 10 star jumps, then run to the second cone and throw the ball into the buck/waste paper bin, then run to the third cone and use the rope to skip ten times (young boys may jump if they can’t skip), then run to the four cone and place the bean bag on their head and walk to the fifth cone. At the fifth cone they should hop five times on the spot.
- Once the children have finished the obstacles they should run back to the start and then tag the next boy in the line to go.
- The first team to have completed the obstacle course wins!
- Explain exercise such as skipping, jumping, running help to strengthen our bones. These types of exercises are called weight bearing exercises as we are supporting the weight of our own body.
Activity 4: Cotton Bud Skeleton

Aim: To build a skeleton made of cotton buds
Time: 20 minutes
Numbers: No maximum number depending on adequate supervision

Equipment:
- 1 piece of black (or other colour) construction paper per child
- 1 piece of white construction paper in the shape of a skull per child
- 1 whole cotton bud, 22 half cotton buds per child
- Glue
- Black marker pens

Preparation:
Prepare a sample of the cotton bud skeleton using the instructions below.

Instructions:
- Provide each child with a piece of black (or other colour) construction paper, a paper skull and the cotton buds.
- Using the sample as a guide each child should glue the cotton buds to the paper in a skeleton shape.
- Glue the skull onto the paper.
- Provide children with marker pens and instruct them to draw eyes, nose and mouth onto the skull.
- Explain we are born with about 300 bones and these grow together to form the 206 in an adult’s body. The strongest bone in the body is the thigh bone, it is stronger than concrete.
Activity 5 – Take Home Activity

Aim: To explain the importance of having strong bones to others.
Time: 5 minutes
Numbers: No maximum number depending on adequate supervision

Equipment:
Copies of the “Strong Healthy Bones”, one per child (see copy enclosed).

Preparation:
• Print copies of the “Strong Health Bones” leaflet.
• Familiarise yourself with the information included in the leaflet.

Instructions:
• Ask the children to take the ‘Strong Healthy Bones’ leaflet home (copy at end of this section) and tell someone at home what they have learned about keeping bones healthy.
• You may want to reinforce some of the information included in the leaflet.
• PLEASE NOTE the guidance regarding daily vitamin D requirements have been updated since the “Strong Healthy Bones” leaflet was printed. Parents should be advised –
  o babies from birth to one year need 8.5 to 10 micrograms (8.5-10µg) of vitamin D a day except those drinking 500ml infant formula per day
  o children aged 1 to 4 years old should be given a daily supplement containing 10µg of vitamin D
  o all adults (including pregnant and breastfeeding woman) and children aged 5 years and over should consider taking a daily supplement containing 10µg of vitamin D. Between late March/April to the end of September the majority of people aged 5 and over will obtain sufficient Vitamin D from sunlight when outdoors so may not require a vitamin D supplement. However some groups may have little sun exposure and should consider a supplement containing 10ug all year round. These groups include those who are not often outdoors, wear clothes that cover most of their skin when outdoors and minority ethnic groups with dark skin.
If your child is on a special diet speak to your child’s Registered Paediatric Dietitian or GP to ensure they are getting enough calcium.

Vitamin D

Vitamin D helps your body make the most of the calcium you eat. About 95% of our vitamin D comes from the sunlight which our bodies then use to make vitamin D in our skin. There isn’t currently enough evidence to recommend how much sunlight children need. By your child regularly enjoying some time outside during the summer months you can help ensure they are getting enough vitamin D. Babies should always be kept out of direct sunlight. Vitamin D can also be found in margarines, eggs, oily fish (e.g. herring or sardines), cod liver oil and fortified breakfast cereals. It is recommended that children between the ages of 6 months and 5 years of age take vitamin drops to help meet their total daily requirements for vitamin D of 7–8.5 microgrammes (μg).

A Healthy Balanced Diet

Calcium and vitamin D are essential to build healthy bones but so is a healthy balanced diet. Encourage your child to eat a varied diet and include foods from the 4 main food groups:

- Fruit and vegetables, including 5 portions daily.
- Carbohydrate foods like bread, potatoes, pasta and cereals. Try to offer something from this food group at each meal.
- Milk and other dairy products, try to offer 2 or 3 servings each day.
- Protein foods like meat, fish, eggs, pulses, nuts and seeds. Try to include at least 2 servings from this group each day.

It is also important to make sure your child drinks sufficient fluid, 6-8 cups of fluid is recommended per day. Water, milk and sugar free squashes are the best drinks to choose.

Exercise and strong bones

Bones love exercise. Exercises that are particularly good for building strong bones are weight bearing exercises. Weight bearing exercise is any physical activity where your child is taking the weight of their own body.

Some good examples of weight bearing exercises are:

- Dancing or exercises to music are fun ways to boost bone health
- Running or even walking help to build bone in the spine and hips
- Team sports such as football or netball are not only good weight bearing exercises but they also encourage all children to take part
- Skipping is a good bone builder, aim for 5 minutes each day

Further copies of this leaflet can be obtained from: Health Improvement/Community Development Service, Spruce House, Cushendall Road, Ballymena Tel: 028 2563 5575

Strong Healthy Bones
A guide for promoting your child’s bone health
Bones and the skeleton

Bones and the skeleton form the framework of our bodies. Bones help us to move and protect our internal organs. Without bones we would look very different creatures.

A baby's body has many more bones than an adult's, some of these bones grow together to form the 206 bones that we have as adults.

Our bones are very much alive, growing and changing at the time. Although we may reach our full height by our late teens, our bones are still growing in strength (density) up until our twenties.

Why is bone health so important for children?

During childhood and teenage years your child should build as much bone as possible.

So now is the time to maximise your child's bone strength and density!

Ensuring your child builds strong bones in childhood and adolescence will lower their chances of developing osteoporosis in later life. Osteoporosis is the tragic bone disease that can lead to possible fractures in later life.

Although our bone strength is mainly decided by our genes, if children are encouraged to take plenty of exercise and eat a well balanced calcium rich diet, they can still build strong healthy bones.

Food for your child's bones

Calcium

To build long lasting bones your child's diet needs to include enough calcium. Calcium gives strength and density to our bones and teeth.

How much calcium does your child need?

<table>
<thead>
<tr>
<th>Age</th>
<th>Daily calcium requirements 1 bone 1-3 years 4-6 years 7-10 years 11-15 years (girls) 11-15 years (boys)</th>
<th>Under 1 525mg (6 bones) 350mg (6 bones) 450mg (7½ bones) 550mg (6 bones) 800mg (13 bones) 1000mg (10 bones)</th>
</tr>
</thead>
</table>

Our bodies can't make calcium. From birth to becoming an adult our bones gain about 1 kilogramme (kg) of calcium. By eating foods and drinks rich in calcium we can ensure we are getting enough calcium and build as much bone as possible for the future.

The best sources of calcium are milk and dairy products. Use the table to the right to check if your child is getting enough.

Calcium Counter

<table>
<thead>
<tr>
<th>Food</th>
<th>Calcium content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk, all types (200ml)</td>
<td>I I I I</td>
</tr>
<tr>
<td>Cheese (30g)</td>
<td>I I I I</td>
</tr>
<tr>
<td>Yoghurt (150g)</td>
<td>I I I I</td>
</tr>
<tr>
<td>Rice Pudding (200g)</td>
<td>I I I I</td>
</tr>
<tr>
<td>Custard (120ml)</td>
<td>I I I I</td>
</tr>
<tr>
<td>Calcium fortified cereal 1 serving (30g) e.g. Cheerios, Oats and More, Frosteos</td>
<td>I I I I I</td>
</tr>
<tr>
<td>Calcium fortified instant hot oat cereal 1 serving (30g) e.g. Ready Brek® or supermarket own brand</td>
<td>I I I I I</td>
</tr>
<tr>
<td>Wholemeal bread 2 large slices</td>
<td>I</td>
</tr>
<tr>
<td>While bread 2 large slices</td>
<td>I I</td>
</tr>
<tr>
<td>Calcium fortified bread 1 slice e.g. Hotwot best of both</td>
<td>I I I I</td>
</tr>
<tr>
<td>Baked beans small tin (220g)</td>
<td>I I I I</td>
</tr>
<tr>
<td>Sardines (60g)</td>
<td>I I I I</td>
</tr>
</tbody>
</table>

Adapted from “Calcium, are you getting enough?” SCMA, Royal Allergy and Intolerance Specialist Group 2012.
Eatwell Guide

Use the Eatwell Guide to help you get a balance of healthier and more sustainable food. It shows how much of what you eat overall should come from each food group.

- Choose wholegrain or higher fibre versions with less added fat, salt and sugars
- Potatoes, bread, rice, pasta and other starchy carbohydrates
- Choose unsaturated oils and use in small amounts
- Choose lower fat and lower sugar options

Sources: Public Health England in association with the Welsh government, Food Standards Scotland and the Food Standards Agency in Northern Ireland

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Activity 1: Eatwell Guide – Healthy Balanced Diet

Aim: To understand what a healthy balanced diet is.
Time: 20 minutes
Numbers: No maximum number depending on adequate supervision

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- Picture of eatwell guide (see copy included)
- Paper plates
- Colouring pencils

Instructions:
A healthy balanced diet provides our body and bones with the vitamins, minerals and energy needed to keep us healthy.

A healthy balanced diet includes foods from the 4 main food groups
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3. dairy and alternatives
4. beans, pulses, fish, eggs, meat and other proteins

The fifth food group (smallest group) includes oil and spreads. High fat/sugar foods such as crisps, sweets and chocolate should be eaten in small amounts.

- Provide each child with a paper plate and ask them to use the colouring pencils to draw and colour their favourite meal on the plate.
- Show the children a picture of the eatwell guide (copy included). The guide shows all the different types of food that we should eat for a healthy diet.
- Highlight the five types of foods or food groups on the plate, explaining their names and the colours of the groups.
- Get the children to identify the largest and smallest food groups on the eatwell guide; these should make up the largest and smallest parts of our diet.
- Highlight the green food group- “fruit and vegetables”. Ask the children if they know how many portions of fruit and vegetables they should eat each day. Explain that dried, frozen, fresh and juiced fruit and vegetables all count towards our 5 a day. Fruit juice should be limited to one glass per day. These foods help fill us up fibre, vitamins and minerals. Ask the children to check if the meals on their plates include any fruit or vegetables.
• Explain the yellow food group includes “potatoes, bread, rice, pasta and other starchy carbohydrates”. Each meal we eat should include a food from this food group to give us lots of energy. Ask the children to look at the meals they have drawn and identify if they include any foods from this group.

• Highlight that the blue food group is the “dairy alternatives” food group. These foods contain lots of calcium, helping to make our bones strong. Foods in the group include milk, yoghurts and cheese. Ask the children if anyone has drawn any of these foods on their paper plate.

• We should eat foods from this food group when we are young to help make our bones strong for the future. Bone strength can be “banked” until our mid to late twenties.

Activity 2: Mr Bones

Aim: To understand what is needed to make our bones strong.
Time: 20 minutes
Numbers: No maximum number depending on adequate supervision

Equipment:
• Skeleton model/puppet/picture
• Props to tell the story - Calcium fortified cereals e.g. Ready Brek or supermarket own fortified oat cereal, Cheerios, Rice Krispies multigrain shapes, Calcium fortified breads e.g. white bread, Hovis best of both (correct at time of print)

Instructions:
Explain that you are going to tell a story about Mr Bones. The children should listen to the information you are going to tell them about how to make their bones strong to help with the story.

• Foods with lots of calcium give strength and density to bones and teeth. Foods rich in calcium include milk, cheese, yoghurts and bread and cereals with added calcium.
• Exercise can also help to make bones stronger. Children are recommended to do 60 minutes of exercise each day. Skipping, jumping, jogging, dancing and even fast walking give bones a boost and strengthen them. These types of exercises are called weight-bearing exercises as we are supporting the weight of our own body.
• Bones also need sunlight to make them strong. By enjoying some time outside during the months of April to Mid-October this helps to build strong bones.
• If we don’t build strong bones our bones become fragile and can break more easily when we are older.
The children should listen carefully to the story and when they hear Mr Bones doing something that will make his bones strong they should shout “Building strong bones”.

**Mr Bones**

I’d like to introduce you all to Mr Bones (show the skeleton puppet or model). Mr Bones has healthy strong bones; he makes sure that he gives his bones the things that they love to make them strong. He knows that if he doesn’t do this his bones will become weak and may break.

Mr Bones gets up early in the morning for his busy day. Mr Bones knows that breakfast is an important way to start the day. He loves to have a bowl of cereal and a glass of orange juice for his breakfast.

*BUILDING STRONG BONES*- Children should identify that Mr Bones’ cereal would include milk and as this belongs to the milk and dairy foods food group these foods are rich in calcium giving strength and density to bones. Calcium helps form the honeycomb structure that makes up our bones. It may be useful to also highlight that some cereals have calcium added to them and show the boys boxes of these cereals (see equipment list above).

Mr Bones is a teacher and takes the bus each day to school. After a morning of classes he’s hungry and ready for his snack at break time. His school have a healthy break time policy so he enjoys a banana and some school milk for his break.

*BUILDING STRONG BONES*- Children should identify that Mr Bones school milk belongs to the milk and dairy foods food group and increases his calcium intake. Highlight that all the boys should be drinking semi-skimmed milk and all children over 2 years of age should drink semi-skimmed milk.

Mr Bones is teaching a P.E. lesson. It’s a lovely sunny day so Mr Bones takes the boys and girls outside to enjoy some sun.

*BUILDING STRONG BONES*- Children should identify that sunlight helps build strong bones. Sunlight helps our body make the most of the calcium in the foods we eat.

Mr Bones has a fun packed P.E. lesson planned for them with dancing, jumping and skipping. He joins in with his pupils to show them what to do.

*BUILDING STRONG BONES*- Children should identify that these types of exercises help build strong bone. Children should do at least 60 minutes of exercise each day.

Mr Bones enjoys his packed lunch with the rest of the teachers in the staff room. His wife made his lunch today - he enjoys a white bread ham sandwich, a yoghurt and an apple.

*BUILDING STRONG BONES*- Children should identify that Mr Bones’ yoghurt belongs to the milk and dairy foods food group and is rich in calcium. Some breads have calcium added to them and you might want to show the boys some examples of these (see equipment for examples).
After a busy afternoon at school Mr Bones takes the bus home from school. He remembers that his wife gave him a pot of some rice pudding today and as it’s a long bus journey home he enjoys eating it on the bus.

*BUILDING STRONG BONES*- Children should identify that Mr Bones rice pudding is rich in calcium as it is prepared with milk.

Mr Bones arrives home from school for his dinner. Mrs Bones has prepared his favourite dinner, lasagne with cheese on top and custard for dessert.

*BUILDING STRONG BONES*- Children should identify that the cheese on Mr Bones lasagne belongs to the milk and dairy foods food group. Mr Bones has definitely eaten the 2-3 servings of milk and dairy foods recommended each day. They should also identify that custard, like rice pudding, is a milk pudding and is rich in calcium.

Mr Bones is ready for bed after a busy day but he knows that he has given his bones the things they love to be strong- milk and dairy foods, sunlight and exercise.

**Activity 3: Menu Planning**

**Aim:** To identify foods rich in calcium.

**Time:** 15 minutes

**Numbers:** No maximum number depending on adequate supervision

**Equipment:**
- Copies of Resource Sheet 1, one per child
- Colouring pencils

**Preparation:** Photocopy Resource Sheet 1.

**Instructions:**
- Provide each child with a copy of Resource Sheet 1.
- Ask the children to plan and draw a meal to include a main course and pudding with foods which have lots of calcium.
- Discuss what foods the children have drawn.
Activity 4: Obstacle Course

Aim: To learn what type of exercises help to make our bones strong.
Time: 15 minutes
Numbers: 6+ No maximum number depending on adequate supervision

Equipment:
- Skipping ropes (1 per team)
- Bean Bags (1 per team)
- Balls (1 per team)
- Bucket/Waste paper bin (1 per team)
- 5 cones (per team)

Preparation:
- Set out five cones for each team equally spaced down the room.
- Place a ball and bucket/waste paper bin at the second cone.
- Place a skipping rope at the third cone.
- Place a bean bag at the fourth cone.

Instructions:
- Split the children into 2/3 teams depending on the number of children.
- Get each team to form a single line with the children lining up behind one another at a starting line.
- Explain what to do. On the word go the children should run to the first cone and do 10 star jumps, then run to the second cone and throw the ball into the bucket/waste paper bin, then run to the third cone and use the rope to skip ten times (young boys may jump if they can’t skip), then run to the fourth cone and place the bean bag on their head and walk to the fifth cone. At the fifth cone they should hop five times on the spot.
- Once the children have finished the obstacles they should run back to the start and then tag the next boy in the line to go.
- The first team to have completed the obstacle course wins!
- Explain exercise such as skipping, jumping, running help to strengthen our bones. These types of exercises are called weight bearing exercises as we are supporting the weight of our own body.
Activity 5: Body Bones Quiz

Aim: To learn the names of the bones of the body.
Time: 15 minutes
Numbers: No maximum number depending on adequate supervision

Equipment:
- Copies of Resource Sheet 2, one per child
- Pens

Preparation: Photocopy copies of Resource Sheet 2.

Instructions:
- Ask the children to complete the Body Bones quiz on Resource Sheet 2.
- Discuss the children’s answers.

Activity 6: Pasta Skeleton

Aim: To build a skeleton out of pasta.
Time: 15 minutes
Numbers: No maximum number depending on adequate supervision

Equipment:
- Pasta – variety of sizes and shapes e.g. spaghetti, twists, penne
- One piece of construction paper per child
- Strong glue
- Marker pens
Preparation:
- Prepare a sample of the pasta skeleton using the instructions below and the picture above.
- For younger children roughly draw with the marker pen the skeleton outline on the paper for them to follow.

Instructions:
- Pour the pasta into bowls.
- Provide each child with a piece of construction paper.
- Invite the children to use the glue and pasta to create the skeleton shape.
- Allow time to dry.

Activity 7 – Take Home Activity
Aim: To explain the importance of having strong bones to others.
Time: 5 minutes
Numbers: No maximum number depending on adequate supervision

Equipment:
Copies of the “Strong Healthy Bones”, one per child (see copy enclosed).

Preparation:
- Print copies of the “Strong Health Bones” leaflet.
- Familiarise yourself with the information included in the leaflet.

Instructions:
- Ask the children to take the ‘Strong Healthy Bones’ leaflet home (copy at end of this section) and tell someone at home what they have learned about keeping bones healthy.
- You may want to reinforce some of the information included in the leaflet.
- PLEASE NOTE the guidance regarding daily vitamin D requirements have been updated since the “Strong Healthy Bones” leaflet was printed. Parents should be advised –
  - babies from birth to one year need 8.5 to 10 micrograms (8.5-10µg) of vitamin D a day except those drinking 500ml infant formula per day
  - children aged 1 to 4 years old should be given a daily supplement containing 10µg of vitamin D
  - all adults (including pregnant and breastfeeding woman) and children aged 5 years and over should consider taking a daily supplement containing 10µg of vitamin D. Between late March/April to the end of September the majority of people aged 5 and over will obtain sufficient Vitamin D from sunlight when outdoors so may not require a vitamin D supplement. However some groups may have little sun exposure and should consider a supplement containing 10ug all year round. These groups include those who are not often outdoors, wear clothes that cover most of their skin when outdoors and minority ethnic groups with dark skin.
If your child is on a special diet speak to your child's Registered Paediatric Dietitian or GP to ensure they are getting enough calcium.

**Vitamin D**

Vitamin D helps your body make the most of the calcium you eat. About 90% of our vitamin D comes from the sun, which our bodies then use to make vitamin D in our skin. There isn't currently enough evidence to recommend how much sunlight children need. By your child regularly enjoying some time outside during the summer months you can help ensure they are getting enough vitamin D. Babies should always be kept out of direct sunlight. Vitamin D can also be found in margarines, eggs, oily fish (e.g. herring or mackerel), cod liver oil and fortified breakfast cereals. It is recommended that children between the ages of 6 months and 5 years of age take vitamin drops to help meet their total daily requirements for vitamin D of 7.5 microgrammes (µg).

**A Healthy Balanced Diet**

Calcium and vitamin D are essential to build healthy bones but so is a healthy balanced diet. Encourage your child to eat a varied diet and include foods from the 4 main food groups:

- Fruit and vegetables, including 5 portions daily.
- Carbohydrate foods like bread, potatoes, pasta and cereals, try to offer something from this food group at each meal.
- Milk and other dairy products, try to offer 2 or 3 servings each day.
- Protein foods like meat, fish, eggs, pulses, nuts and seeds. Try to include at least 2 servings from this group each day.

It is also important to make sure your child drinks sufficient fluid. 5-6 cups of fluid is recommended per day. Water, milk and sugar free squashes are the best drinks to choose.

**Exercise and strong bones**

Bones love to exercise. Exercises that are particularly good for building strong bones are weight bearing exercises. Weight bearing exercises is any physical activity where your child is taking the weight of their own body.

Some good examples of weight bearing exercises are:

- Dancing or exercises to music are fun ways to boost bone health
- Running or even walking help to build bone in the spine and hips
- Team sports such as football or netball are not only good weight bearing exercises but they also encourage all children to take part
- Skipping is a good bone builder, aim for 5 minutes each day

Further copies of this leaflet can be obtained from Health Improvement/Community Development Service, Spine House, Cushendall Road, Ballymena Tel: 028 2563 5875

Strong Healthy Bones
A guide for promoting your child’s bone health
Bones and the skeleton

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A baby’s body has many more bones than an adult’s, some of these bones grow together to form the 206 bones that we have as adults.

Our bones are very much alive, growing and changing all the time. Although we may reach our full height by our late teens, our bones are still growing in strength (density) up until our twenties.

Why is bone health so important for children?

During childhood and teenage years your child should build as much bone as possible.

So now is the time to maximise your child’s bone strength and density!

Creating a child builds strong bones in childhood and adolescence will affect their chances of developing osteoporosis in later life. Osteoporosis is the fragile bone disease that can lead to bone fractures in later life.

Although our bone strength is mainly decided by our genes, if children are encouraged to take plenty of exercise and eat a well balanced calcium rich diet, they can still build strong healthy bones.

Food for your child’s bones

Calcium

To build strong healthy bones your child needs to include enough calcium. Calcium gives strength and density to your bones and teeth.

How much calcium does your child need?

Calcium Counter

<table>
<thead>
<tr>
<th>Food</th>
<th>Calcium content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk, all types (200ml)</td>
<td>800mg</td>
</tr>
<tr>
<td>Cheese (20g)</td>
<td>35mg</td>
</tr>
<tr>
<td>Yoghurt (150g)</td>
<td>150mg</td>
</tr>
<tr>
<td>Rice Pudding (200g)</td>
<td>100mg</td>
</tr>
<tr>
<td>Custard (120ml)</td>
<td>100mg</td>
</tr>
<tr>
<td>Calcium fortified cereal 1 serving (80g) e.g. floods, oats and more, porridges</td>
<td>800mg</td>
</tr>
<tr>
<td>Calcium fortified instant hot cereal 1 serving (50g) e.g. floods, oats and more, porridges</td>
<td>800mg</td>
</tr>
<tr>
<td>Wholemeal bread 2 large slices</td>
<td>150mg</td>
</tr>
<tr>
<td>White bread 2 large slices</td>
<td>150mg</td>
</tr>
<tr>
<td>Calcium fortified bread 1 slice e.g. Home made bread</td>
<td>800mg</td>
</tr>
<tr>
<td>Salad dressing small tin (22g)</td>
<td>150mg</td>
</tr>
<tr>
<td>Sardines (100g)</td>
<td>150mg</td>
</tr>
</tbody>
</table>

Adapted from “Calcium are not getting enough!” BDA, Food Allergy and Intolerance Specialist Group 2013.
Eatwell Guide

Use the Eatwell Guide to help you get a balance of healthier and more sustainable food. It shows how much of what you eat overall should come from each food group.

- **Fruit and vegetables**: Eat at least 5 portions of a variety of fruit and vegetables every day.
- **Choose wholegrain or higher fibre versions with less added fat, salt and sugar**: Choose foods lower in fat, salt and sugars.
- **Limit fruit juice and/or smoothies to a total of 150ml a day**
- **Eat more beans and pulses, 2 portions of sustainably sourced fish per week, one of which is oily. Eat less processed meat**

Sources: Public Health England in association with the Welsh government, Food Standards Scotland and the Food Standards Agency in Northern Ireland

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Resource sheet 1

Name

In the box below draw a meal including both a main course and pudding which are rich in calcium. Remember these foods are found in the blue section of the eatwell plate.
Resource sheet 2

Name ______________________

Body Bones

Can you identify the numbered parts on the skeleton? Write the number of the matching name of the bone or joint.

____ Wrist
____ Pelvis
____ Sternum
____ Knee
____ Clavicle
____ Cranium
____ Vertebrae
____ Rib Cage
____ Elbow
____ Femur
____ Ankle

Quiz

Which of these are joints? Circle them on the skeleton.
Activity 1: Eatwell Guide

Aim: To understand what a healthy balanced diet is.
Time: 20 minutes
Numbers: No maximum number depending on adequate supervision

Equipment:
- Paper
- Pens
- Picture of eatwell guide (copy enclosed)

Instructions:
A healthy balanced diet provides our body and bones with the vitamins, minerals and energy needed to keep us healthy.

A healthy balanced diet includes foods from the 4 main food groups
1. fruit and vegetables (one of the largest groups)
2. potatoes, bread, rice, pasta and other starchy foods (one of the largest groups)
3. dairy and alternatives
4. beans, pulses, fish, eggs, meat and other proteins

The fifth food group (smallest group) includes oil and spreads. High fat/sugar foods such as crisps, sweets and chocolate should be eaten in small amounts.

- Provide the young people with pens and paper and ask them to create a menu for a day to include breakfast, lunch, and evening meal and snacks.
- Show the young people a picture of the eatwell guide (copy included). The eatwell guide shows all the different types of food that we should eat for a healthy diet.
- Highlight the five types of foods or food groups on the plate, explaining their names and the colours of the groups.
- Explain the 5 foods groups on the plate are different sizes and this shows how much of what we eat should come from each food group. Groups, making up the largest part of the plate should make up the largest part of what we eat part of the plate. Groups, making the smallest part of the plate should make up the smallest part of what we eat.
- Ask the young people what they know about the green “fruit and vegetables” group? Dried, frozen, fresh and juiced fruit and vegetables all count towards the five portions of
fruit and vegetables we should eat each day. Fruit juice should be limited to one glass per day. These foods help fill us up fibre, vitamins and minerals. They can help prevent diseases like cancer and heart disease.

- Ask the young people what they know about the yellow “Potatoes, bread, rice, pasta and other starchy carbohydrate” food group? This group includes foods such as cereals, bread, rice, potatoes, pasta, noodles, and other starchy foods. Each meal we eat should include a food from this food group to give us lots of energy. These foods help fill us up with fibre, vitamins and minerals. Brown rice and pasta and wholemeal and granary breads are higher in fibre and keep us feeling full for longer.

- Highlight that the blue food group is the “dairy and alternatives” food group. These foods contain lots of calcium, helping to make our bones strong. Foods in the group include milk, yoghurts and cheese. We should eat foods from this food group when we are young to help make our bones strong for the future.

- Ask the young people if they can identify which foods groups the foods they have included in their menu belong to.

Activity 2: Tall Bones, Strong Bones.

Aim: To learn how our bones change as we get older.

Time: 10-20 minutes (dependent on number of children)

Numbers: No maximum number depending on adequate supervision

Equipment:
- Tape measure
- Pencil
- Piece of stiff cardboard or a book

Instructions:
Bones grow at their fastest rate from childhood to adolescence and boys stop growing completely at about 16 years old. During this time children should maximise their bone strength by eating calcium rich foods, doing exercise such as running, skipping, walking, dancing, team sports and getting enough sunlight. Bone strength can be “banked” until our mid to late twenties.

- Invite the young people to guess what height they are and then each have their height measured.

- To measure height accurately the young people should remove their shoes and bulky clothes. Measure the young person’s height on flooring that isn’t carpeted and against a flat surface such as a wall. The young person should stand with their feet flat, together and their heels against the wall. Their legs should be straight, arms at their sides and shoulders level. They should looks straight ahead so their line of sight is parallel with the floor.
• Measure height while the young person stands with head, shoulders, buttocks, and heels touching the wall (as above). Depending on the overall body shape of the young people, all points may not touch the wall.
• Use a flat headpiece such as a book or piece of stiff cardboard to form a right angle with the wall and lower this until it firmly touches the top of the young person’s head.
• Lightly mark where the bottom of the book or cardboard meets the wall.
• Use a metal tape to measure from the floor to the marked measurement on the wall to get the height measurement.
• Alternatively you could borrow a stadiometer or height measure from a doctor or health professional.

Activity 3: Getting Enough Calcium

Aim: To learn how much calcium our bodies need and what foods are rich in calcium.
Time: 30 minutes (dependent on number of children)
Numbers: No maximum number depending on adequate supervision

Equipment:
- Copies of Resource Sheet 3 & 4, one per child
- Soya milk with added calcium
- Other milks such as oat, coconut and rice milk
- Soya yoghurt with added calcium
• Fruit such as strawberries, bananas
• Blender
• Plastic Cups
• Spoons

**Preparation:**
• Photocopy copies of Resource Sheet 3 & 4
• Ensue you are aware of any food allergies

**Instructions:**
Calcium is essential to give strength and density to our bones and teeth. The amount of calcium our body needs depends on our age.

• Provide the young people each with a copy of Resource Sheet 3. Highlight the sheet shows how much calcium we all need. Ask the young person to complete the questions on the resource sheet.
• It is essential we eat lots of calcium rich foods when we are young to build bone for the future. If we don’t build strong bones our bones can become fragile when we are older causing osteoporosis and our bones are more likely to break.
• Provide the young people each with a copy of Resource sheet 4, showing the calcium content of various foods. Food such as milk, cheese, yoghurt and milky puddings are naturally rich in calcium. Highlight that some foods don’t contain lots of calcium but calcium can be added to improve their nutritional content. On the sheet examples of these include fortified breakfast cereals, white and calcium fortified breads.
• Explain people who suffer from conditions such as a cow’s milk allergy or lactose intolerance need to avoid milk and milk products. These people need to eat other calcium rich foods to make sure they get enough calcium.
• Provide the young people with a selection of milk alternatives such as soya, rice, oat and coconut milk. Pour a small amount of the milk alternatives into cups for the young person to taste and discuss which they prefer.
• The young people should look at the cartons and complete the table on Resource sheet 4 with the calcium content of 200ml of each milk alternative. The children may need some assistance with this. Note one bone = 60mg calcium.
• Provide the young people with a small amount of soya yoghurt to taste and discuss what they think of the taste. They should then complete the table on Resource sheet 4 with the calcium content of the soya yoghurt.
• Make a small smoothie using one of the milks and some fruit in a blender. Allow the children to taste some of the smoothie.
Activity 4: Sport to Build Bones

Aim: To learn what types of sport help to build strong bones.
Time: 10 minutes
Numbers: 4+ No maximum number depending on adequate supervision

Equipment:
- Large piece of cardboard or white board
- Marker pens

Preparation:
On a large piece of cardboard or on a white board, write the following sports – football, swimming, snooker, cycling, dance, netball, basketball, rounders, and skipping.

Instructions:
It is recommended that young people do 60 minutes of exercise each day. Bone is a living tissue which reacts to weight-bearing exercise by growing stronger. Weight-bearing exercises are therefore the best type of exercise to strengthen our bones. Weight-bearing exercise is any activity done whilst on our feet and legs that works muscles and bones against gravity.

- Ask the young people to work in groups of 2/3 and discuss if these sports are weight-bearing or not weight-bearing.
- Discuss their answers.
- Football, dancing, netball, basketball, rounders, and skipping are all good examples of weight-bearing exercise.
- Swimming helps to maintain strong muscles and is good for the heart but is not the best for exercising bones. It is not weight-bearing.
- Snooker is weight-bearing because the player is walking around the table, but this sport does not actively encourage impact on the body to promote bone strength.
- Cycling is a great sport for keeping fit and healthy but because the bike is taking the weight of the body, this is not best for bone building. This is not a weight-bearing exercise.
- Also, high-impact weight-bearing exercises are good for bone building; these include running, jumping, stair climbing, and tennis.
- Discuss with the young people what exercise they do each day to build strong healthy bones.
Activity 5 – Team Games

Aim: To play some weight bearing team games.
Time: 40 - 90 minutes
Numbers: 8+ No maximum number depending on adequate supervision and team game chosen

Equipment:
Equipment required to play team game e.g. rounders, football or basketball.

Instructions
- Explain to the children that they are going to play a team game that is weight bearing and helps make our bones stronger.
- Divide the young people into two teams.
- Explain the rules of the game and play for the time available.

Activity 6 – Get jogging!

Aim: To do some weight bearing exercise.
Time: 30 minutes
Numbers: No maximum number depending on adequate supervision

Preparation:
- Ensure children bring sensible, comfortable flat shoes or trainers and comfortable clothes.
- Plan a route for the young people to take and a time that will avoid them jogging in the dark (if possible).

Instructions:
- Ask the young people to prepare for the jog by putting on their comfortable clothes.
- Do some warm up exercises with the young people.
- Explain the route that they will take.
- Encourage the participants to jog together and to jog and walk intermittently as their fitness allows.
- This activity could be a sponsored event for your Boy’s Brigade Company.

Activity 7: ‘Are We Getting Enough?”

Aim: To learn if our bodies are getting enough calcium.
Time: 1 week
Numbers: No maximum number depending on adequate

Equipment:
- Copies of Resource Sheet 3, 4 and 5, one for each young person
Preparation:
Photocopy Resource Sheet 3, 4 and 5

Instructions:
• Ask the young people to complete Resource sheet 5 at home for one week.
• They should record the foods and drinks that they consume during the week that contain calcium e.g. dairy and alternatives and foods with added calcium.
• At the end of the week they should total up the amount of calcium they consumed each day and check if they are getting enough.
• Resource Sheet 3 & 4 should be used to help complete this activity.
Resource Sheet 3: Getting enough calcium

How much calcium do you need each day?

<table>
<thead>
<tr>
<th>Age</th>
<th>Calcium requirements (per day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 1</td>
<td>525mg (9 bones)</td>
</tr>
<tr>
<td>1-3 years</td>
<td>350mg (6 bones)</td>
</tr>
<tr>
<td>4-6 years</td>
<td>450mg (7½ bones)</td>
</tr>
<tr>
<td>7-10 years</td>
<td>550mg (9 bones)</td>
</tr>
<tr>
<td>11-18 years (girls)</td>
<td>800mg (13 bones)</td>
</tr>
<tr>
<td>11-18 years (boys)</td>
<td>1000mg (16 bones)</td>
</tr>
<tr>
<td>Adults (19+ years)</td>
<td>700mg (11 bones)</td>
</tr>
</tbody>
</table>

Q1. Use the table above to work out how much calcium your body need each day

Q2. Which group of people need the largest amount of calcium each day?

Q3. Which group require the lowest amount of calcium each day?
### Resource Sheet 4: Calcium content of foods

<table>
<thead>
<tr>
<th>Food</th>
<th>Calcium content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk, all types (200ml)</td>
<td></td>
</tr>
<tr>
<td>Cheese (30g)</td>
<td></td>
</tr>
<tr>
<td>Yoghurt (120g)</td>
<td></td>
</tr>
<tr>
<td>Rice Pudding (200g)</td>
<td></td>
</tr>
<tr>
<td>Custard (120ml)</td>
<td></td>
</tr>
<tr>
<td>Calcium fortified cereal 1 serving (30g) e.g. Cheerios, Oats and more, Frosties, Rice Krispies Multigrain shapes</td>
<td></td>
</tr>
<tr>
<td>Calcium fortified instant hot oat cereal 1 serving (30g) e.g. Ready Brek® or supermarket own brand</td>
<td></td>
</tr>
<tr>
<td>Wholemeal bread 2 large slices</td>
<td></td>
</tr>
<tr>
<td>White bread 2 large slices</td>
<td></td>
</tr>
<tr>
<td>Calcium fortified bread 1 slice e.g. Hovis best of both</td>
<td></td>
</tr>
<tr>
<td>Calcium enriched soya milk (200ml)</td>
<td></td>
</tr>
<tr>
<td>Calcium enriched rice milk (200ml)</td>
<td></td>
</tr>
<tr>
<td>Calcium enriched oat/coconut milk (200ml)</td>
<td></td>
</tr>
<tr>
<td>Calcium enriched soya yoghurt (125gpot)</td>
<td></td>
</tr>
</tbody>
</table>

= 60 mgs of calcium
Resource sheet 5

Name: ..............................................................................................................

How many bones of calcium do you need each day? ..................................
(using Resource Sheet 3)

Record the foods that you eat during the day which contain calcium e.g. dairy foods and foods with added calcium. Record their calcium content in bones using Resource Sheet 4 to help. At the end of each day total up the amount of calcium you have eaten to check if you are getting enough.

<table>
<thead>
<tr>
<th>Days of the week</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food eaten No. of Bones</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food eaten No. of Bones</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food eaten No. of Bones</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food eaten No. of Bones</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food eaten No. of bones</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total no of bones</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Eatwell Guide

Use the Eatwell Guide to help you get a balance of healthier and more sustainable food. It shows how much of what you eat overall should come from each food group.

Choose wholegrain or higher fibre versions with less added fat, salt, and sugar.

Potatoes, bread, rice, pasta and other starchy carbohydrates

Choose unsaturated oils and use in small amounts

Eat less often and in small amounts

Eat at least 5 portions of a variety of fruit and vegetables every day

Beans, pulses, fish, eggs, meat and other proteins

Choose lower fat and lower sugar options

Dairy and alternatives

Eat more beans and pulses, 2 portions of sustainably sourced fish per week, one of which is oily. Eat less red and processed meat

Choose wholegrain cereal, couscous, rice, whole wheat pasta, spaghetti

Limit fruit juice and/or smoothies to a total of 150ml a day

Water, lower fat milk, sugar-free drinks including tea and coffee all count.

Per day: 2000kcal

2500kcal = ALL FOOD + ALL DRINKS

Source: Public Health England in association with the Welsh government, Food Standards Scotland and the Food Standards Agency in Northern Ireland

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Introduction

A healthy balanced diet provides our body and bones with the vitamins, minerals and energy needed to keep us healthy.

A healthy balanced diet includes foods from the 4 main groups:
- Fruit and vegetable, include 5 portions daily.
- Potatoes, bread, rice, pasta and other starchy foods. Try to eat something from this food group at each meal.
- Dairy products, try to include 2 or 3 servings each day.
- Protein foods like meat, fish, eggs, pulses and beans. Try to include at least 2 servings from this group each day.

High fat and high sugar foods should make up a small part of our diet.

Essential ingredients to building strong bones are:
- calcium rich foods such as milk, cheese, yoghurt and alternatives
- exercise such as running, skipping, walking, dancing, team sports
- sunlight

Bones are growing at their fastest rate from childhood to adolescence and during this time bone strength should be maximised. Bone strength can be “banked” up to our mid-to late twenties. If we don’t build strong bones our bones can become fragile when we are older causing osteoporosis (the fragile bone disease). Our bones are more likely to break or fracture if we have osteoporosis.

Calcium gives strength and density to our bones and teeth. It is recommended that children should do 60 minutes of moderate intensity exercise each day. Bone is a living tissue which reacts to weight bearing exercise by growing stronger. Running, dancing, team sports and skipping are all good examples of weight bearing exercise. Our bones also need sunlight to make them strong. By enjoying some time outside during the months of April to Mid-October this helps to build strong bones.
Activity 1: Health Promotion Talk

Aim: To teach others about the importance of building strong health bones. To learn the importance of a healthy balanced diet and how our bodies can build strong bone.

Time: 35 minutes

Numbers: No maximum number depending on adequate supervision

Equipment:
- The “Boost your bones’ session for Anchors or Juniors.
- Equipment required for the activity.

Preparation:
Seniors should read the introductory information to this session and leader notes to support the activity that they are going to deliver to Anchors or Juniors.

Instructions:
- Using the ‘Boost your Bones’ session for Anchors or Juniors, Seniors should deliver Activity 1 or 2.
- Ensure that Seniors are confident with the information included in the session and discuss their plan for the session before delivering it.
- After the session is delivered discuss with the seniors what went well and also what they feel they could improve if they were to repeat the session.

Activity 2: Getting Enough Calcium

Aim: To learn how much calcium our bodies need and what foods are rich in calcium.

Time: 1 week

Numbers: No maximum number depending on adequate supervision

Equipment:
- Copies of Resource Sheet 6, one per senior
- Copies of Resource Sheet 7, one per senior
- Copies of Resource Sheet 8, one per senior

Preparation: Photocopy resource 6, 7 & 8

Instructions:
Calcium is essential to build strong bones. The amount of calcium our body needs is dependent on our age. Our bones grow in strength until we are in our mid to late twenties and it is essential we eat lots of calcium rich foods when we are young to “bank” bone for the future. Including two to three portions from the dairy foods food group a day helps make sure we get enough calcium. If our bodies don’t get enough calcium we are more likely to suffer from osteoporosis when we are older. Osteoporosis causes our bones to be weak and then they are more likely to break.
• Provide the Seniors with Resource Sheet 6. Highlight that this sheet shows how much calcium we all need.
• Ask the Seniors to use the table to identify how much calcium their bodies need each day.
• Provide the Seniors with Resource Sheet 7 which includes the calcium content of various foods. Explain it can be seen that milk and dairy foods such as cheese, yoghurt, and milk puddings are a good source of calcium. Some foods don’t naturally contain much calcium but manufacturers can add calcium to improve their nutritional content. The table includes examples of these foods such as white and calcium fortified breads and cereals.
• Explain that people who suffer from conditions such as a cow’s milk allergy or lactose intolerance need to avoid milk and foods containing milk. These people need to eat other calcium rich foods to make sure they get enough calcium. These foods can include milk alternatives such as soya, oat and rice milk and soya cheeses or yoghurts.
• Ask the Seniors to complete Resource sheet 8 at home for one week. They should record the foods and drinks they consume during the week that contain calcium e.g. dairy foods and foods with added calcium. At the end of the week they should total up the amount of calcium they consumed (using Resource Sheet 7 to help) and check if they are getting enough calcium each day.

Activity 3: Health Promotion Poster

Aim:
To prepare a poster explaining the importance of Vitamin D. To learn why our bodies need Vitamin D.

Time – 30 minutes
Numbers- No maximum number depending on adequate supervision

Equipment:
• Variety of colouring pencils and markers
• Paper

Instructions:
Our bones need calcium rich foods but they also need Vitamin D to make the most of this calcium. Vitamin D is sometimes called the sunshine vitamin.

• Ask the Seniors to prepare a health promotion poster to highlight the importance of vitamin D to promote healthy strong bones. It may be useful to include some of the following points in the poster:
  • There are a few foods that are rich in Vitamin D, these include margarines, eggs, oily fish (e.g. herring or sardines), cod liver oil and fortified breakfast cereals.
  • About 90% of our vitamin D comes from the sunlight. Our bodies then use this sunlight to make vitamin D in our skin.
Most people can make enough vitamin D from being out in the sun daily for short periods with their forearms, hands or lower legs uncovered and without sunscreen from late March or early April to the end of September, especially from 11am to 3pm.

People should be careful not to burn in the sun by covering up and using sunscreen if spending longer periods in the sun.

People with dark skin will need to spend longer in the sun to produce the same amount of vitamin D as someone with lighter skin.

Most groups are advised now to take a Vitamin D supplement –

- **Babies from birth to one year** need 8.5 to 10 micrograms (8.5-10µg) of vitamin D a day except those drinking 500ml infant formula per day.
- **Children aged 1 to 4 years old** should be given a daily supplement containing 10µg of vitamin D.
- **All adults (including pregnant and breastfeeding woman) and children aged 5 years and over** should consider taking a daily supplement containing 10µg of vitamin D. Between late March/April to the end of September the majority of people aged 5 and over will obtain sufficient Vitamin D from sunlight when outdoors so may not require a vitamin D supplement. However some groups may have little sun exposure and should consider a supplement containing 10µg all year round. These groups include those who are not often outdoors, wear clothes that cover most of their skin when outdoors and minority ethnic groups with dark skin.

**Activity 4: Sport to Build Bones**

**Aim:** To learn what types of sport help to build strong bones.

**Time:** 10 minutes

**Numbers:** 4+ No maximum number depending on adequate supervision

**Equipment:**
- Large piece of cardboard or white board
- Marker pens

**Preparation:**
On a large piece of cardboard or on a white board write the following sports – football, swimming, snooker, cycling, dance, netball, basketball, rounders and skipping.

**Instructions:**
It is recommended that young people do 60 minutes of exercise each day. Bone is a living tissue which reacts to weight bearing exercise by growing stronger. Weight bearing exercises are therefore the best type of exercise to strengthen our bones. Weight bearing exercise is any activity done whilst on our feet and legs that works muscles and bones against gravity.
• Ask the young people to work in groups of 2/3 and discuss if these sports are weight bearing or not weight bearing.
• Discuss their answers.
• Football, dancing, netball, basketball, rounders and skipping are all good examples of weight bearing exercise.
• Swimming helps to maintain strong muscles and is good for the heart but is not the best for exercising bones. It is not weight bearing.
• Snooker is weight bearing because the player is walking around the table but this sport does not actively encourage impact on the body to promote bone strength.
• Cycling is a great sport for keeping fit and healthy but because the bike is taking the weight of the body, this is not best for bone building. This is not a weight bearing exercise.
• Also high impact weight bearing exercises are good for bone building; these include running, jumping, stair climbing and tennis.
• Discuss with the young people what exercise they do each day to build strong healthy bones.

Activity 5 – Team Games

Aim: To play some weight bearing team games.
Time: 40 - 90 minutes
Numbers: 8+ No maximum number depending on adequate supervision and team game chosen

Equipment:
Equipment required to play team game e.g. rounders, football or basketball.

Instructions
• Explain to the children that they are going to play a team game that is weight bearing and helps make our bones stronger.
• Divide the young people into two teams.
• Explain the rules of the game and play for the time available.

Activity 6 – Get jogging!

Aim: To do some weight bearing exercise.
Time: 30 minutes
Numbers: No maximum number depending on adequate supervision

Preparation:
• Ensure children bring sensible, comfortable flat shoes or trainers and comfortable clothes.
• Plan a route for the young people to take and a time that will avoid them jogging in the dark (if possible).
**Instructions:**
- Ask the young people to prepare for the jog by putting on their comfortable clothes.
- Do some warm up exercises with the young people.
- Explain the route that they will take.
- Encourage the participants to jog together and to jog and walk intermittently as their fitness allows.
- This activity could be a sponsored event for your Boy’s Brigade Company.

**Resource Sheet 6 - Getting enough calcium**

How much calcium do you need each day?

<table>
<thead>
<tr>
<th>Age</th>
<th>Calcium requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 1</td>
<td>525mg (9 bones)</td>
</tr>
<tr>
<td>1-3 years</td>
<td>350mg (6 bones)</td>
</tr>
<tr>
<td>4-6 years</td>
<td>450mg (7 ½ bones)</td>
</tr>
<tr>
<td>7-10 years</td>
<td>550mg (9 bones)</td>
</tr>
<tr>
<td>11-18 years (girls)</td>
<td>800mg (13 bones)</td>
</tr>
<tr>
<td>11-18 years (boys)</td>
<td>1000mg (16 bones)</td>
</tr>
<tr>
<td>Adults (19 +years)</td>
<td>700mg (11 bones)</td>
</tr>
</tbody>
</table>
### Resource Sheet 7: Calcium content of foods

<table>
<thead>
<tr>
<th>Food</th>
<th>Calcium content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk, all types (200ml)</td>
<td></td>
</tr>
<tr>
<td>Cheese (30g)</td>
<td></td>
</tr>
<tr>
<td>Yoghurt (125g)</td>
<td></td>
</tr>
<tr>
<td>Rice Pudding (200g)</td>
<td></td>
</tr>
<tr>
<td>Custard (120ml)</td>
<td></td>
</tr>
<tr>
<td>Calcium fortified cereal 1 serving (30g) e.g. Cheerios, Oats and more, Frosties, Rice Krispies Multigrain shapes</td>
<td></td>
</tr>
<tr>
<td>Calcium fortified instant hot oat cereal 1 serving (30g) e.g. Ready Brek® or supermarket own brand</td>
<td></td>
</tr>
<tr>
<td>Wholemeal bread 2 large slices</td>
<td></td>
</tr>
<tr>
<td>White bread 2 large slices</td>
<td></td>
</tr>
<tr>
<td>Calcium fortified bread 1 slice e.g. Hovis best of both</td>
<td></td>
</tr>
<tr>
<td>Calcium enriched soya milk (200ml)</td>
<td></td>
</tr>
<tr>
<td>Calcium enriched rice milk (200ml)</td>
<td></td>
</tr>
<tr>
<td>Calcium enriched oat/Coconut milk (200ml)</td>
<td></td>
</tr>
<tr>
<td>Calcium enriched soya yoghurt (125g pot)</td>
<td></td>
</tr>
</tbody>
</table>

= 60 mgs of calcium
Resource sheet 8

Name: ..............................................................................................................

How many bones of calcium do you need each day? ......................................
(using Resource Sheet 6)

Record the foods that you eat during the day which contain calcium e.g. dairy foods and foods with added calcium. Record their calcium content using Resource Sheet 7 to help. At the end of each day total up the amount of calcium you have eaten to check if you are getting enough.

<table>
<thead>
<tr>
<th>Days of the week</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Food eaten</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of Bones</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Food eaten</strong></td>
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<td><strong>Food eaten</strong></td>
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<tr>
<td><strong>Food eaten</strong></td>
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</tr>
<tr>
<td>No. of Bones</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Total no of bones</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>