



## Bikes, Trikes & Ride-on Toys



Restricted Growth Association

Working to benefit people with restricted growth and their families



# BIKES, TRIKES AND RIDE-ON TOYS

This booklet is written for people with restricted growth and parents of children with restricted growth who want to find out how to get hold of bicycles and toys suitable for them and/or their children. It will answer questions such as:

- What features should I look for in a bike or toy?
- How can I get adaptations made?
- Are there any bikes or ride-on toys designed especially for people of restricted growth?
- What other sources of help are available?

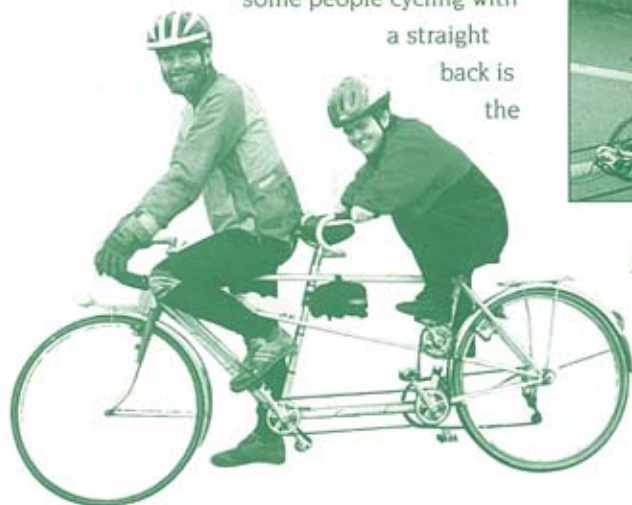
### Finding the right model

The problem with standard issue bicycles and ride-on toys from major manufacturers is they just don't fit people of restricted growth. Difficulties include:

- Your or your child's feet cannot reach the pedals.
- The handlebars are too far forward and are out of reach.
- Brake levers are hard to reach or grip for children with short fingers.
- The saddle is too high, so that it is hard to get on and off the bike and, once seated, you can't reach the ground.

Many people of restricted growth also experience back problems and any bike they ride may need to take account of this in its design. For

some people cycling with a straight back is the



best position, whereas for others cycling with the back bent forward can actually be more comfortable. This is because bending forward can relieve the pressure on the vertebral canal in people suffering from spinal stenosis (see the Restricted Growth Association's **What is...?** booklets).

### Bikes and trikes

Finding suitable equipment means either buying specially made items or adapting standard issue ones. Whether for children or for adults, this can be a costly process and it may be difficult to find people who can do it properly. Some ideas of useful sources to contact are listed on the centre spread.



*Close-up of the tandem's modified drive system.*

*Amy (then aged 15) and her father on their specially modified tandem. Amy's modified handlebar is easier for her to reach. For younger children, a bar could be extended right behind the saddle for safety.*

Many parents and cyclists find contacts through the Restricted Growth Association (RGA) extremely useful. The RGA's Newsletters and Information Magazines contain details of sources of equipment and people who can adapt it. They also contain adverts from members selling equipment which may be suitable for others. You could even place your own advert to say what you are looking for.

- 6 We picked our son's bike up from the RGA National Day in Peterborough. We would like to pass it on in a similar way when he's grown out of it. 9

Volunteer Eugene tests a prototype of the bicycle (at speed!)

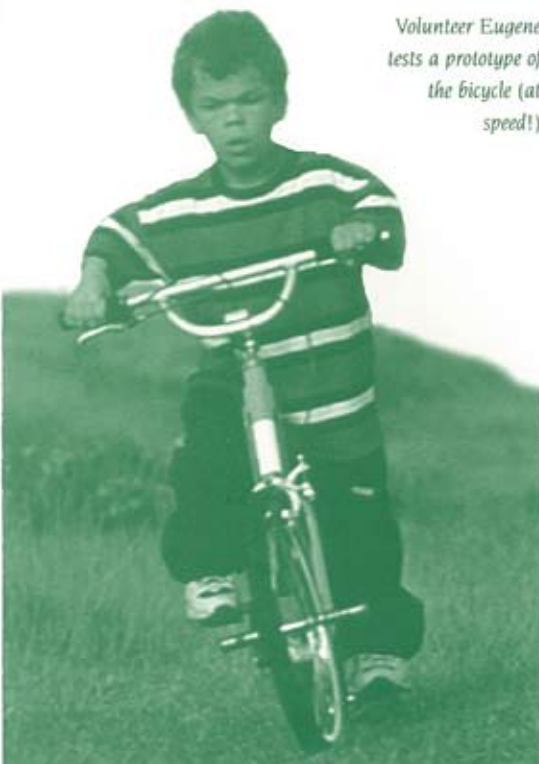


### BIME projects

The Bath Institute of Medical Engineering (BIME) has worked closely with the Restricted Growth Association in a number of areas. A BIME survey of RGA members found that one of the highest-scoring items in terms of unmet needs was bikes and trikes for children. Three of its projects are therefore geared specifically towards providing these for children of restricted growth.

With funding from the BBC's *Children In Need*, BIME has designed a bicycle that incorporates many features requested by people of short stature:

- The overall dimensions suit children with an average-length torso but short limbs.
- The bike is highly adjustable (e.g. in seat and pedal positioning) to





accommodate varying degrees of growth restriction – for example, for children with very short legs, the pedals can be positioned forward of the saddle to allow room underneath when turning a corner.

- A back pedal brake removes the need for one of the brake levers (which children with short fingers often have difficulty reaching).
- The front brake lever has been carefully selected to be adjustable towards and away from the handlebars.

Prototypes of the bicycle have been rigorously tested by children of restricted growth who also provided valuable input during the design and styling process.

The bicycle is now available to potential users. As a charity, BIME only charges the cost price.

BIME has also developed a second design, for a bicycle aimed at younger children. This is a pedal cycle with stabilisers, suitable for pre-school children of about two years and older. In designing the bicycle, BIME again consulted widely with parents of children of short stature, who supplied detailed information about ideal dimensions, features, etc.

The third BIME project is to design a tricycle for young children. At the time of writing, this project is not so far advanced as the two bicycle projects, but BIME will be happy to give you information about progress and availability.



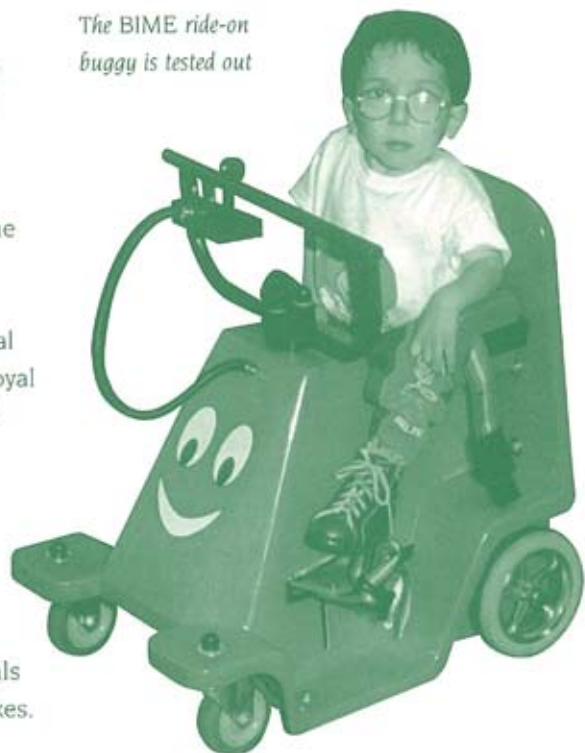
BIME has also developed an electrically driven ride-on buggy which may be suitable for some children of restricted growth (see photo on the right).

For information, or to discuss the possibility of ordering one the BIME bikes or testing a buggy, contact: Bath Institute of Medical Engineering, Wolfson Centre, Royal United Hospital, Bath BA1 3NG, tel: 01225 824104, fax 01225 824111, e-mail [bime@bath.ac.uk](mailto:bime@bath.ac.uk).

### Other sources

- The Occupational Therapy departments of some hospitals will supply specially fitted bikes.
- John Dean's Bike Shop, Congleton, Cheshire, tel: 01260 273277 – John Dean has equipped a number of children and adults of restricted growth with bicycles, offering excellent service at reasonable prices. John says he enjoys the challenge and, most of all, seeing the kids' faces when they can ride a bike just like anyone else. He can also get hold of large-size cycle helmets.

*The BIME ride-on buggy is tested out*



- Neatwork, PO Box 2, Coldstream, Berwickshire TD12 4NW – produces a range of special-needs cycling equipment.
- The Wheel Thing, 6101 Big Springs, Arlington, TX 76001, USA, tel: (817) 478 5509, e-mail: [wheelthing@flash.net](mailto:wheelthing@flash.net) – this American company custom-builds high-quality bicycles for people of short stature,

including mountain-bikes and tricycles. Using this company has obvious difficulties (expense of shipping, difficulty of seeing products first-hand, problems if what you get is not quite what you want), but they may be worth pursuing if you are after a particular type of bike or trike.

#### Bikes & toys for young children

For children in particular, ride-on toys can be a source of endless pleasure and the thrill of getting your first bike can be enormous. It is important that children of restricted growth are not deprived of this joy.

- 6 *When my daughter was three years old (she has achondroplasia), she could not reach the pedals on her trike, so we bought her a very small bicycle with stabilisers.* 9

*John Dean (at the back) with RGA members for whom he has supplied adapted bikes*





6 My little girl wanted a bike, so we went off to try them out. She stands at 30 inches tall (76 cm) and her inside leg is about 10 inches (26 cm). Where the bike's saddle is placed is important – if it is an integral part of the frame, this makes it easier for the toddler to reach the pedals and handlebars. Where the saddle is on a step by itself, this can make the reachability of the pedals and handlebars harder or impossible. We found the Raleigh Banjo Toddler Tricycle a good choice. ♪

6 Stability can be a problem, even if your child's legs can reach the pedals. Standard Mothercare or Early Learning Centre trikes can be made stable by taping a large bag of dried fruit underneath the seat. If you're lucky, the fruit can be used in the next Christmas cake. Alex had his undercarriage for nearly two years, so the fruit had unfortunately passed its sell-by date. ♪



Two-year-old Ryan enjoys his new Early Learning Centre Trike, made of wood with plastic wheels. Ryan's parents say it is the first ride-on toy that lets him touch the floor: 'It has given him so much independence – he can get on and off by himself and he whizzes around all over the place on it.'

Other bikes, trikes and toys that parents have found to be suitable for young children of restricted growth are:

- Early Learning Centre toddle-along car
- Early Learning Centre/Gault Trike (see photo below)
- Mothercare 'Bunny bike'
- Bath Institute of Medical Engineering (BIME) ride-on buggy – a buggy powered by a rechargeable electric battery (see earlier photo).

However, brands are constantly changing, with old models being withdrawn and new ones introduced, so it is important to check before you spend your money that any bike, trike or toy you are thinking of buying is suitable for your own child. Apart from reachability (hands to handlebars, feet to pedals/ground), look carefully at safety and stability, and at how easy your child finds it to ride. Remember that most children (of restricted growth or average



stature) do not develop the coordination needed to use pedals until they are about 3 or 4 years of age.

One potentially useful source of help is REMAP. They design one-off solutions and adaptations to problems experienced by individuals.

- REMAP GB  
'Hazeldene'  
Ightham  
Sevenoaks  
Kent TN15 9AD  
Tel: 01732 883818
- REMAP (Scotland)  
Maulside Lodge  
Beith  
Ayrshire KA15 1JJ  
Tel: 01294 832566

REMAP adapted a Raleigh Tipper tricycle for one young girl with restricted growth. At 18 months, Jess, the proud owner, had an inside leg measurement of about 9 inches (23 cm). The trike's seat was 12 inches (30 cm) from the ground – this was reduced to 7.5 inches (19 cm), by taking 4 inches (10 cm) off the trike's frame and putting on much smaller wheels back and front. The length from seat to pedal, which used to be 13 inches (33 cm), is now 9 inches (23 cm).



*Before adaptation*



*After adaptation*

*Jess on her adapted bike*



### Sharing information

If you come across any firms or individuals that have supplied or adapted bicycles or ride-on toys to suit adults or children with restricted growth, the Restricted Growth Association would be delighted to hear about them. By sharing the information, we can not only benefit other people in a similar position, but can also give more custom to people who have shown themselves responsive to the needs of individuals of short stature.



This booklet was written by Hugh Hillyard-Parker, with the help of the many members and their families who have contributed their experiences towards it. Their contributions were compiled by RGA Information Officer, Ros Smith.

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The RGA encourages members to share information and sources of help.

### Other RGA publications

#### What is...?

The **What is...?** series looks at particular restricted growth conditions or issues. The titles in this series are:

Achondroplasia  
Hypochondroplasia  
Pseudoachondroplasia  
SED  
Diastrophic Dysplasia  
Rarer Syndromes

#### Lifestyles

The **Lifestyles** series focuses on particular aspects of living with a restricted growth condition. The other titles in this series are:

Babies and the Early Years  
Going to School  
The Teenage Years  
Careers, Employment and Education  
Having a Baby  
Adoption  
The Later Years  
Driving a Car  
Sporting Opportunities  
What Shall I Wear?  
Limb Surgery  
Personal Hygiene



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