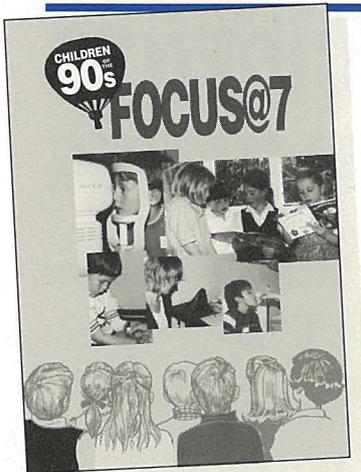


CHILDREN
OF THE
90s

Newsletter

For Funders, Professionals, Collaborators and those concerned with the Children of the 90s Research initiative. February 1999

ALSPAC The Avon Longitudinal Study of Pregnancy and Childhood



The beginning of the end of the beginning

When the ALSPAC study was first designed, it was acknowledged that the first sensible 'end point' of the data would be the phenotypes collected with hands on examination of the children, when they were 7 years of age. Our study children started being 7 in 1998 and we now plan to continue to follow them until they are 70!

Our original plan had been to examine all children at this point in time, but when the amount of time each child would need to be tested was calculated, the result (6 hours of tests!) led us to conclude that it was far too much for a 7 year old child to cope with in one day. We are therefore currently inviting children to come on two occasions - the first when they are actually 7 years of age and the second when they are 8.

What the 7 year tests include

- Measures of height, weight, length of limbs, body fat (using bio-electric impedance), circumference of head, waist, hips and mid-upper arm.
- Blood pressure.
- Hearing using audiometry.
- Tympanometry to assess the presence of glue ear.
- A detailed assessment of allergic response to a variety of different allergens including cats, dogs and horses, latex, pollen, house dust mites, peanuts and other nuts together with a variety of other foods.
- Dietary assessments, using a 3 day dietary diary completed prospectively by the family, followed

by an interview with the parent to complete any gaps in the detail.

- Examination of the skin for signs of visible flexural dermatitis (eczema).
- Examination of the child's spine for curvature.
- Motor co-ordination tests, looking at balance, gross and fine motor co-ordination.
- Test of reading.
- Spelling test.
- A test of the ability of the child to identify phonemes in words.
- Detailed vision test.

In addition blood will be taken from the child after the arm has been made insensitive, using an anaesthetic cream (Emla).

Response Rates

The first indications from the clinic are that the response rate is in the order of 75% to 78%. Parents are bringing their children not just from the local Avon area, but from places as far afield as France and the United States!

These examinations are proving highly popular, with both the children and their parents enjoying them ■

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We hope you like our new style of Newsletter. It is part of our ongoing policy to improve communication between ALSPAC, the Children of the 90s and our Funders and Collaborators, without whom our Research would not be successful. Design and Print is with the help of John Price & Associates

Truly International!

We've always believed in the importance of Children of the 90s, and now we know that our study families feel the same way. As we invite children to FOCUS@7, not only do local families come and enjoy their time with us, but we have families flying in from abroad, anxious not to miss their appointment.

Already people have arranged to visit us from South Africa, Belgium, Scotland and even the United Arab Emirates. So keen are they that we have had 'phone calls from places as far away as America and Canada.

First from abroad

Our first 'foreign visitors' were Emily Neighbour and her daughter Laurel. The family have lived in central Paris for the last two years and Emily told us, "Laurel is bi-lingual already. She speaks French better than I do! She loves answering the questionnaires and would enjoy doing more; you should ask more of the children, it's fun for them." (*we intend to, Emily - Ed.*)

"After filling in all the questionnaires, I feel we should give you maximum information. The least I can do is make sure you've got the complete picture and it's good for Laurel to actually meet the people she's heard of," added Emily on her arrival at Bristol.

Laurel told us that the best things she likes about living in France, are the fresh bread shop at the corner of her street and learning to fence at school.

FOCUS@7

Over the next two years we will be having the pleasure of meeting many of

the families at FOCUS@7 from both home and abroad. Cathy Trickey, who signs herself "A busy mum!", sums up how we hope they will enjoy their visit to us in the coming months.

"I just wanted to write and say how nice it was to put a face to one of the office staff who deal with questionnaires and letters. Amy and I thoroughly enjoyed our morning at FOCUS@7. I would like to congratulate you all on the well organised, friendly and 'pressure free' environment it was. We are both happy and proud to be part of the study. Keep up the good work! ■



Laurel and her mum in Bristol



ACCIDENTS & INJURIES

Between the ages of 4½ and 5½ the following accidents and injuries happened to every 1000 children

14 had a road traffic accident.

112 had a park or playground accident.

79 had an accident at school.

163 had a wasp or bee sting.

14 had been badly sunburnt.

10 had nearly drowned.

21 had a front tooth knocked out.

9 had been knocked unconscious.

48 had cuts requiring stitches.

7 had a burn or scald, needing a skin graft.

GOING TO THE DENTIST

Between the ages of 4½ and 5½ the following happens to every 1000 children.

96% had been to the Dentist.

11% have had a filling.

3% have had a tooth extracted

4% have had a dental x-ray.

17% had started losing their milk teeth.

Children of the 90s are collecting up to 4 milk teeth that fall out (or are pulled out by the dentist) per child. Examination of the teeth provides a valuable insight into some of the pollutants to which the child has, over time, been exposed.



What Children Eat at 5 years of age

The most popular breakfast was cereal with milk, eaten by 96%. Only 25% of these never had sugar coated types and 8% always had sugar coated cereal. However, 5% were said to have nothing to eat or drink before school.

57% of children had a packed lunch at school, whereas 32% had a school dinner. 43% of children had crisp type snacks, 4 or more times a week; a few even had them for breakfast. Only 5% never had them.

Chocolate is by far the most popular sweet treat; only 5% never had any. 19% had chocolate 4 or more times a week. 21% of children never ate sweets, but 11% were having them 4 or more times a week.

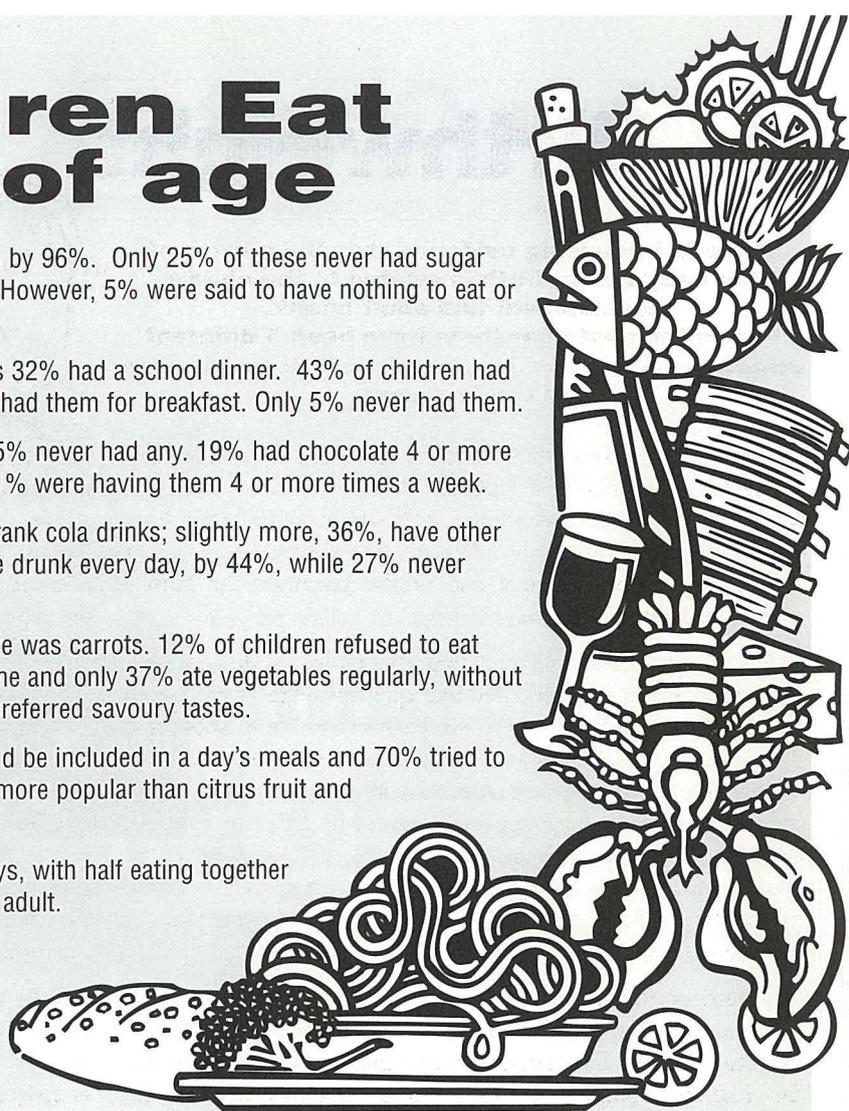
When they are thirsty, one third of children regularly drank cola drinks; slightly more, 36%, have other fizzy drinks. Squash and other diluted fruit drinks were drunk every day, by 44%, while 27% never drank plain water.

At the main meal time, the most popular fresh vegetable was carrots. 12% of children refused to eat vegetables at all; a further 25% refused some of the time and only 37% ate vegetables regularly, without fuss. 21% were said to prefer sweet food while 14% preferred savoury tastes.

Around 80% of parents had a rule that fresh fruit should be included in a day's meals and 70% tried to include vegetables and salad. Apples and bananas are more popular than citrus fruit and only 3% refused to eat fruit at all.

Most children had a cooked evening meal on schooldays, with half eating together with adults every day. 18% rarely ate together with an adult.

Parents used various strategies when their children wouldn't eat certain foods. The most popular was trying to persuade the child to eat a small amount of the food, but most tried not to make an issue of it ■



PUBLICATIONS

The number of papers in academic journals that are based on this study now number over 60. This is a summary of some of them.

Factors affecting Child Health and Development

IN 1996 we published a paper assessing the effect of sleeping positions on the health of the child up to 6 months of age.

We found that children positioned to sleep prone (on their fronts) were more likely to have a number of different signs and symptoms of infection and other health problems during this period. These findings had been particularly important in regard to assuring those involved in "Back to Sleep" Campaigns both in this country and elsewhere in the world, that the supine sleeping position (i.e. child placed on their backs) carried no adverse health risks. There was, however, a possibility that sleeping positions affected the development of the child.

We have now looked at the way in which the child develops, according to early sleeping positions and found, to our surprise, that in the first 6 months of life the child placed prone, to sleep, became

more advanced in their development than those placed on their backs. However, by the time the children were 18 months of age, these differences had evened out and there were no differences between the children placed on their backs, on their sides or on their fronts, with regard to their development.

Thus, we were able to conclude that although there is some evidence that putting infants to sleep on their backs results in a reduced development score at 6 months of age, this disadvantage appears to be transient.

Weighing this result against the adverse health effects demonstrated with the prone sleeping position, we concluded that there was no reason to change the message of the "Back to Sleep" Campaign which has successfully prevented large numbers of sudden infant deaths.

Apart from the sleeping position we have also shown that symptoms during the first months of life, such as wheezing attacks and diarrhoea, are more likely to occur in children who have not been breastfed and those who live in relatively deprived social circumstances.

However, the prevalence of cough at this age did not vary with social circumstances, although the likelihood of the coughing child being taken to the doctor was higher in those children from deprived groups.

Other results that have hit the headlines, although not formally published, are concerned with the relationship between asthma and the hygiene in the home. We found that the children from homes where there are high standards of hygiene, were those more likely to develop wheezing attacks in infancy and early childhood. This finding fits in with a number of hypotheses on the genesis of atopy and received wide international coverage.

Birthweight

There is increasing evidence that the growth of the baby before birth is related to the child's development and adult health.

During the past year there have been 5 different publications on birthweight and growth of the child in the first year.

WHAT happens to the baby before he or she is born can be very important with regard to their future development and even what happens to them as adults. Although it may seem a long time ago, we are still investigating the effects of different aspects of the environment and of the genes on the baby's weight at the time of birth.

It has always been assumed that the mother's diet is very important. From the very detailed questions that were asked towards the end of pregnancy, we have been able to show that the diet of our mothers was very similar to the diets of a national survey where women had been asked to weigh and record everything they ate for 7 days. We have shown that on average, the amount of food mothers were eating was adequate, with the possible exceptions of certain trace elements such as iron, magnesium, potassium and folate, where women were taking less than recommended.

Our nutrition team then looked to see what differences there may be according to whether the mother felt she had difficulty in affording food. It was certainly true that mothers who felt that they had not enough money to afford the food that they wanted, had a different diet - they ate less fish, fruit, vegetables and salad.

We also found that mothers who smoked had a markedly different diet with substantially less fish, fruit, vegetables and salad than mothers who didn't smoke. Babies of mothers who smoke are, of course, smaller on average, but when we looked at the growth of the babies of non-smoking mothers who said they had difficulty in affording food, the weight of these babies was no different from those of other non-smoking mothers. This indicates that on the whole, poor diet doesn't seem to affect birthweight in our population. Of course, poor diet in Avon is still a very good diet when compared with people in a famine situation, in developing countries.

Another of our studies published recently, has looked at the jobs



PUBLICATIONS
1998 saw the first ALSPAC publication relating the child's genotype to fetal growth. It was in the prestigious journal 'Nature Genetics'

done by pregnant mothers, to see whether they might affect the growth of the baby. This is the first of a number of different studies looking at various aspects of work. The study divided the work into 9 types of jobs and showed that once one had allowed for things that affected birthweight, such as smoking, the type of job made no difference to the weight of the child; and indeed there was no difference in the weight at birth of babies born to mothers who had worked compared with those who had not.

We have not ignored fathers. One study published last year has shown that X-ray of the fathers in the abdominal area, before conception, was related to lower birthweight in the child, and a publication in 1998 looked at the alcohol consumption of the fathers before conception. Fathers will be delighted to know that there was no relationship between alcohol drinking pre-conception, and the birthweight of the child.

Finally we published a study concerning the genotype of the child. The gene studied was the insulin gene, assessed in the growth of 758 singletons born at term, who had been weighed at frequent intervals over the first 2 years in our Children in Focus Clinics. The genotype of the child was related to his or her size at birth, particularly with regard to the head circumference. This is an exciting beginning to our efforts, to try to identify ways in which the growth of the baby, during pregnancy and subsequently, may be affected by both genes and the environment ■

References include:

Rogers I., Emmett P. and the ALSPAC Study Team. Diet during pregnancy in a population of pregnant women in South West England. *European Journal of Clinical Nutrition* (1998) 52, 246-250.

Rogers I., Emmett P., Baker D., Golding J. and the ALSPAC Study Team. Financial difficulties, smoking habits, composition of the diet and birthweight in a population of pregnant women in the South West of England. *European Journal of Clinical Nutrition* (1998) 52, 251-260.

Farrow A., Shea K. M., Little R. E. and the ALSPAC Study Team. Birthweight of term infants and maternal occupation in a prospective cohort of pregnant women. *Occupational and Environmental Medicine* (1998) 55, 18-23.

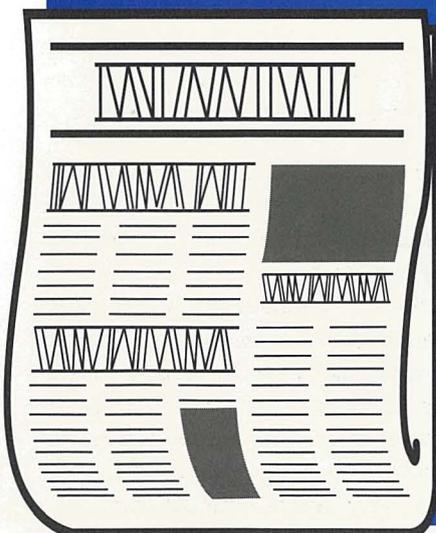
Dunger D., Ong K. K. L., Huxtable S. J. et al. Association of the INS VNTR with size at birth. *Nature Genetics* (1998) 19, 98-100.

PAPERS IN PRESS

There are a number of important papers from ALSPAC that are currently in press. These include studies on:-

- The effect of the mother's diet on the malformation hypospadias.
- The factors associated with blood pressure of the child at age 3 years.
- The ways in which families split up and parents acquire new partners.
- The prevalence of anaemia in the second year of life.
- The effects of pacifiers (dummies) on child health.
- The relationship between pertussis immunisation and asthma.

For a full list of Papers, you can visit our Web site: <http://www.ich.bris.ac.uk/ALSPAC> or send a large, stamped, addressed envelope to:-
Children of the 90s, 24 Tyndall Avenue, Bristol, BS8 1BR, UK.



Changes in ASAC

The ALSPAC Scientific Advisory Committee (ASAC) has the remit of advising Jean Golding on scientific aspects of the survey. It comprises a distinguished group of people, which includes the following:-

Dr. John Henderson (Chair), Consultant Paediatrician, Division of Child Health, University of Bristol.

Professor Jean Golding, Scientific & Executive Director of ALSPAC, University of Bristol.

Professor Marcus Pembrey, Professor of Paediatric Genetics, Institute of Child Health, UCL, London.

Professor Michael Beveridge, Dean of Human Sciences, University of Plymouth.

Professor Judy Dunn, MRC Research Professor, Institute of Psychiatry, London.

Professor Peter Fleming, Head, Division of Child Health, University of Bristol.

Professor Roland Levinsky, Dean, Institute of Child Health, UCL, London.

Professor George Davey Smith, Department of Social Medicine, University of Bristol.

Mrs. Yasmin Iles-Caven (Secretary) Unit Manager, ALSPAC.

As the remit of the ALSPAC study has become more extensive over time, it has become increasingly important to ensure that the different aspects of the survey are adequately represented. We do this by holding workshops at various times, with invited guests from both Britain and abroad ■

MRC recognises ALSPAC

The Medical Research Council has developed a new form of funding for research - by promoting the creation of multi-disciplinary groupings. In order to become a Co-Operative Group a very detailed proposal has to be submitted and peer reviewed.

We were delighted when, in the summer of 1998, we were told that the MRC had made ALSPAC a Co-operative Group!

The current rules of funding for MRC grants are that project grants can only be submitted by people or projects that are part of a Co-operative Group. Consequently, by becoming such a Group, we are able to encourage others from a variety of disciplines to put forward ALSPAC related project grants.

Although awarding the Co-operative Group status carried relatively little funding with it (15% of the core funds that ALSPAC needs per year), this award has recognised the scientific excellence of ALSPAC. On the back of this, we have therefore been able to submit and win a component grant which is designed to assess possible ways (including genetic susceptibility) in which infection may protect against the development of asthma ■

GAC

In the complex world of genetics, we have found it very important to have a Genetics Advisory Committee (GAC) which is chaired by Marcus Pembrey, the Director of Genetics within ALSPAC.

The members of the GAC include:-

Professor Alex Markham, Leeds.

Professor John Todd, Cambridge.

Professor Steve Humphries, UCL, London.

Dr. Richard Jones, Institute of Child Health, London.

Dr. Linda Tyfield, Bristol.

Professor Ian Day, Southampton.

Professor Jean Golding, Director of ALSPAC.

Dr. Susan Ring (Secretary).

CASDAC

A new sub-committee is currently being created to advise on the various aspects of educational ability, cognitive function, behaviour and other similar aspects of child development.

This committee will be headed by Professor Michael Beveridge, whose title henceforth will be "Director of Cognitive & Social Development within ALSPAC".

Part of the remit of this committee will be to ensure that collaborators do not step on one another's toes, to sort out the best measures to use and to always be aware of new developments in the various fields and how these may be incorporated within the ALSPAC study ■

Marcus Pembrey



Marcus Pembrey, Director of Genetics within ALSPAC, has been the Vice Dean and Mothercare Professor of Genetics at the Institute of Child Health in London for the past 20 years.

On December 18th 1998, there was a splendid ceremony at the Institute, to celebrate his time there and the

fact that he was taking early retirement in order to devote his time and effort to one or two pet projects.

We are delighted that ALSPAC is the first and foremost of his pet projects and we are thrilled that he will be able to devote much of his time in the future, to ensuring that the genetic side of the study is of the highest calibre ■

Other Grants

Other grants received during 1998 have been awarded by:-

The Wellcome Trust
Action Research
British Lung Foundation
Department of Health / Institute of Environmental Health
NHS R&D Executive
Migraine Trust
National Epilepsy Research Fund



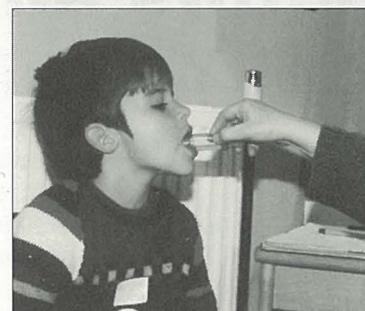
In spite of such success with funding, we still have a shortfall. The £1 million a year it costs to keep the study running, together with the extra £1 million per year to cover the running costs of the 7 and 8 year assessments, is a burden that we have to address. However, even small contributions are useful.



So, in common with most other charitable and educational organisations, we are turning to Business Partners (or Sponsors as they used to be called), to help with these vital clinics. We have already launched our "Sponsor a Child" Campaign in 1998, with excellent coverage by both press and television.



It costs us £150 to take one child through the 7 year assessments. Each group or company who sponsors a child will get a special certificate. A Bronze Certificate is given for each £150 sponsorship. For higher donation amounts there are Silver Certificates (for £1000 or more); Gold Certificates (for £5000 or more) and Platinum Certificates (for £10000 or more). There will be public acknowledgement in some 14000 Newsletters; in publications; at our Roadshows and on our www site.



If you have any thoughts on this subject, or ideas for sponsorship schemes, do please write or telephone Pam Holmes on 0117 928 5096.

We need all the help we can get with funding FOCUS@7. We are not asking parents for funding (they commit a lot to us already), but they may be able to persuade others to do so. For example, we have three mums who work for a large company in Bristol, who have suggested to their managers that their company sponsors their children. They are not the only ones who have had the same thought ■



As we go to press the companies listed below have either sponsored a child or given us goods and services in kind.

BRISTOL FERRYBOAT COMPANY

MAIL MARKETING

MATTHEW CLARK WHOLESALE

BARCLAYS BANK

SOMERFIELD STORES

FORT JAMES UK LIMITED

BREMARK ENGINEERING LTD.

APPLE PRINTING

BRISTOL EVENING POST

BRISTOL SELF STORAGE

WATERSTONES

KRAFT JACOBS SUCHARD

OSBORNE CLARK

ABS BRISTOL

BAKERS DOLPHIN

COMET

McVITIES (UK) LTD.

WELLS

CARD WORLD

JOHN PRICE & ASSOCIATES

We have been given lots of complimentary tickets to visit local attractions.

They will be given as prizes from names that will be picked regularly from the FOCUS@7 families



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ALSPAC

Avon Longitudinal
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 and Childhood

