3°C. Studies showing that axillary placement is satisfactory are marred by inadequate description of the method or inappropriate statistical analysis.[12 13]

Little consensus exists on how long thermometers should be left "to cook," but there is no doubt that rectal temperatures may be read sooner. An American study of mercury in glass thermometers in afebrile adults found that the time taken for 90% of thermometers to reach an optimum reading (defined as within 0·2°F of the eventual maximum) was two minutes in the rectum, seven minutes in the mouth, and nine minutes in the axilla.[14] Three quarters of rectal thermometers had reached the optimum within one minute. For the axilla, manufacturers' instructions recommend placement for five minutes for electronic thermometers and three minutes for disposable thermometers. In practice, rectal placement of a mercury in glass thermometer for one minute will rarely miss an appreciable fever while an electronic thermometer can be read in seconds.

Properly done, measurement of rectal temperature is less disturbing for the infant than having an arm pinioned to the trunk for several minutes. With the infant supine and lengthwise on a bed or couch the nappy is undone and both ankles are firmly held in one hand so as to flex and abduct the hips revealing the anus. With the other hand the examiner holds the thermometer, which has been well shaken down, between finger and thumb, 2–3 cm from the bulb. Lubricated with a little K-Y jelly and held at an angle of about 30° to the horizontal, bulb end lowermost, the thermometer is gently inserted for a minute or two, with the flexed legs held firmly in the other hand. Familiar with this position from having their nappies changed, infants will usually not be too bothered. Keeping up conversation helps maintain a non-threatening atmosphere. Rectal temperatures of 36·5–37·5°C may be considered normal. Proper cleaning of the thermometer is important; it should be washed, dried, and disinfected—for example, by rubbing with a spirit impregnated swab.

With this method injury to the rectum is virtually impossible. The technique is not difficult. In field trials of Baby Check (a scoring system to grade the severity of acute illness in babies)[15] mothers received written instructions on how to take rectal temperatures; only 6% found it difficult. Aesthetic objections were a bigger problem: two in five mothers initially disliked taking the rectal temperature, though this fell to one in five among those visited regularly by a research nurse.

Taking rectal temperatures, like some other continental practices, offends Anglo-Saxon sensibility, but it's time for this prejudice to go. In assessing a sick infant it is safe, quick, and reliable. If knowing an infant's temperature is important then the rectal method should be used. If not, no temperature should be taken.

DUNCAN KEELEY

General Practitioner,
Thame,
Oxfordshire OX9 3JZ

1 Cole T, Morley C, Thornton A, Fowler M, Hewson P. A scoring system to quantify illness in babies under six months of age. *Journal of the Royal Statistical Association* 1991;**154**:287-304.
2 Bergerson P, Steinfeld M. How dependable is palpation as a screening method for fever? *Clin Pediatr (Phila)* 1974;**13**:350-1.
3 Health Education Authority. *Birth to five. A guide to the first five years of being a parent.* London: Health Education Authority, 1989.
4 Clarke S. The use of thermometers in general practice. *BMJ* 1992;**304**:961-3.
5 Lau JTK, Ong GB. Broken and retained rectal thermometers in infants and young children. *Aust Paediatr J* 1981;**17**:93-4.
6 Frank J, Brown S. Thermometers and rectal perforations in the neonate. *Arch Dis Child* 1978;**53**:824-5.
7 McAllister TA, Roud JA, Marshall A, Holland BM, Turner TL. Outbreak of Salmonella eimsbuettel in newborn infants spread by rectal thermometers. *Lancet* 1986;i:1262-4.
8 Morley CJ, Hewson PH, Thornton AJ, Cole TJ. Axillary end rectal temperature measurements in infants. *Arch Dis Child* 1992;**67**:122-5.
9 Kresch M. Axillary temperature as a screening test for fever in children. *J Pediatr* 1984;**104**:596–9.
10 Weiss M, Regan M, Boule L, France W. Axillary versus rectal temperatures in children. *Pediatr Infect Dis J* 1991;**10**:541–4.
11 Ogren J. The inaccuracy of axillary temperature measurement with an electronic thermometer. *Am J Dis Child* 1990;**144**:109–11.
12 Barrus D. A comparison of rectal and axillary temperatures by electronic thermometer measurements in pre-school children. *Pediatric Nursing* 1983;**9**:424–5.
13 Shann F, Mackenzie A. Axillary or rectal temperatures in children. *Lancet* 1981;i:310.
14 Nichols G, Ruskin M, Glor B, Kelly W. Oral, axillary, and rectal temperature determinations and relationships. *Nurs Res* 1966;**15**:307.
15 Thornton A, Morley C, Green S, Walker K, Bonnett J, Cole T. Field trials of the Baby Check score card: mothers scoring their babies at home. *Arch Dis Child* 1991;**66**:106–10.

Keeping babies in prison

Regime should be more compassionate

The first good look at mother and baby units in Britain's prisons suggests that children are being condemned to a "squalid" and "destructive" start in life. A report by a team from the Department of Health commissioned by the Home Office describes babies lying inert on playmats for long periods and toddlers strapped in buggies in front of videos and claims that in two of the three prisons with facilities "there was no space for babies to be anything but static."[1]

The report gives the overwhelming impression that the prison regime comes first and that it restricts the children as much as their mothers. In one unit breast feeding was strongly discouraged and babies were fed according to the clock—even being woken at night to have a bottle. Mothers were not allowed to take their babies into bed with them. Ethnic differences in child rearing were frowned on.

In two of the units mothers were expected to work or attend classes; the crèche was run by fellow prisoners and overseen by prison staff, none of whom were experienced in child care. The diet for pregnant women, mothers, and babies is criticised as lacking fresh fruit and vegetables. There were no facilities for mothers to cook for their children, and mothers were locked up with their children for 12 hours each night in rooms that often had open toilets.

As if poor facilities and archaic regimes were not enough, the units are also accused of punitive treatment. Another report from the National Association of Probation Officers noted that one way of disciplining mothers was to separate them from their babies.[2] Pregnant women in particular have a hard time in prison, often working until they go into labour and being referred to by staff as "pregs." The pressure group Women in Prison claims that prisoners have a higher rate of stillbirths than other women. A report on Holloway prison by the chief inspector of prisons said that the number of babies weighing under 2500 g was twice the national average.[3]

Under Home Office rules the secretary of state "may, subject to any conditions he thinks fit, permit a woman prisoner to have her baby with her in prison, and everything necessary for the baby's maintenance and care may be provided there."[2] Britain has only 39 places for mothers and babies in three prisons, Askham Grange and Styal in the north and Holloway in the south. Mothers are separated from their babies at 9 months in Holloway and at 18 months in the other

units. They may then see their child once or twice a month. Several mothers have attempted suicide when their babies left prison. There is no counselling at the time of separation.

Much of this justifies the claim that prison is a damaging environment for a child, although there is little evidence that any damage is lasting. Catan's study of children in a mother and baby unit in 1988 found that their performances on Griffiths development scales were similar to those of babies left outside.[4] Although the scores for babies who spent longer than average in the unit declined over four months, they quickly recovered when the babies were released. Babies who were separated from their mothers experienced frequent changes in their carer and exhibited insecure behaviour. A compelling argument against the separation of mothers and babies is that all of the women who had looked after their babies in prison intended to remain with them on release, compared with only half of the mothers whose babies had been cared for outside. Catan concluded that normal development was possible in mother and baby units but that the nursing and prison staff in charge of them must consider the needs of the children and not just the custodial control of their mothers. The negative experiences of the children, such as their physical confinement, were preventable. Catan recommended that qualified child care workers should be responsible for the creches.

Although the conditions in mother and baby units must be improved—and the department of health's report makes 23 recommendations on how this can be done—there is still the issue of whether these women should be in prison at all. The National Association of Probation Officers has stated that not only pregnant women but mothers of dependent children should not be sent to prison except in cases where "they pose a continuing danger to the public."[2] Of the 191 women who served part or all of their sentences in a mother and baby unit in 1989, only 12 had been involved in violent crimes. A recent survey by the Home Office of 600 women in prison found that they had 1321 children.[5] But only a few judges ever receive "social" information on the women they sentence, even though a custodial sentence on a mother often means that her children are put into care. They also seem to be ignorant of the Woolf report into prison disturbances, which stated that "it is important to avoid subjecting anyone to the damaging effects of imprisonment unless this cannot be avoided."[6,7]

In an attempt to alleviate some of the distress felt by mothers and children when they are separated by prison, Holloway has recently adopted a scheme for full day visits. Children can see their mothers on two Sundays a month. But children in care are often unable to take advantage of the scheme.

In 1970 a publication by the Home Office suggested that by the end of the century there would be "fewer or no women at all being given prison sentences."[8] In the past decade the likelihood of a woman being sent to prison has doubled.[5] Because there are few women's prisons the women are often a long way from their families. This is even more of a problem for foreign nationals—usually serving long sentences for drug offences—who often do not know what has happened to their children at home.

Some improvements have followed the Department of Health's report. Holloway's mother and baby unit is being rehoused, and prison officers and nurses are to be given courses on child care. But there will be no nursery nurses—the only group who could put the needs of the child first. It will remain a privilege and not a right for mothers to keep their babies in prison. They will still suffer a traumatic separation at a time appointed arbitrarily by the Home Office. There will be no one to speak for the children. On their release many mothers will still be homeless, in debt, and unsupported.

Any changes are likely to be only cosmetic. As long as mother and baby units are run by prison officers and nurses they will retain their controlled, hospital environment. But if in 1992 we still allow judges to imprison pregnant women for theft it is unlikely that we will be compassionate enough to offer proper care for their children.

LUISA DILLNER

Assistant Editor, *BMJ*

1 Department of Health. *Inspection of facilities for mothers and babies in prison.* London: Department of Health, 1992.
2 National Association of Probation Officers. *Briefing on women, children and custody.* London: NAPO, 1989.
3 Chief Inspector of Prisons. *HM Prison Holloway.* London: HMSO, 1992.
4 Catan L. Infants with mothers in prison. In: Shaw R, ed. *Prisoners' children. What are the issues?* London: Routledge, 1992:19-28.
5 Howard League for Penal Reform. *Women in prison.* London: Howard League, 1992. (Factsheet 7.)
6 Woolf H, Tumim S. *Prison disturbances April 1990. Report of an inquiry.* London: HMSO, 1991.
7 National Association for the Care and Resettlement of Offenders. *A fresh start for women prisoners.* London: NACRO, 1991.
8 Home Office. *Treatment of women and girls in custody.* London: HMSO, 1970.

Antibiotic prophylaxis for dental treatment

For hearts but not for prosthetic joints

Though bacteraemia had been postulated as the cause of infective endocarditis, its source in healthy people remained mysterious until Rushton reported a case of infective endocarditis after dental extractions in 1930.[1] Later, Okell and Eliott showed that extractions released showers of bacteria into the blood stream.[2] Since then dentists have frequently been blamed for endocarditis. Indeed, *Streptococcus viridans* from the mouth is the single most frequent isolate and accounts for almost half the cases of infective endocarditis. Nevertheless, a review of several large series of cases found a reliable history of a dental procedure in only 5-10% of cases.[3]

Infective endocarditis may kill and, theoretically at least, is preventable. But many puzzling features remain about its pathogenesis. Current bacteriological techniques show that bacteraemias follow many procedures. Most of the time few bacteria are released and whether they present an important risk is questionable. Moreover, in most cases no precipitating event is apparent.

In all attempts at giving antimicrobial prophylaxis the risks have to be balanced against possible benefits. For ethical and statistical reasons carrying out the definitive experiment to prove that any form of prophylaxis is effective is now impossible. If Hillson's calculation that the risk of developing the disease was no more than one in 3000[4] is correct then enormous numbers of patients would be needed to establish the effectiveness of any prophylaxis. Epidemiological studies are fraught with difficulties as two recent examples show. Imperiale and Horwitz concluded that prophylaxis gave 91% protection[5] while van der Meer *et al* believed it to give only 49%.[6] Even if the lower figure is correct then prophylaxis is