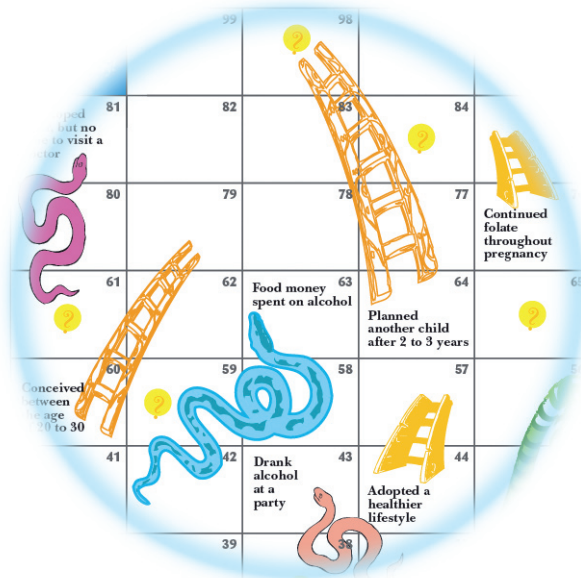


Having Healthy Babies

An Educational “Snakes and Ladders” Game

by Malkanthie Sugathapala *and* Dr Bryan Walker



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“Snakes and Ladders”

Snakes and Ladders originated in India as a game based on morality called Vaikuntapaali or Paramapada Sopanam (the ladder to salvation). This game made its way to England, and was eventually introduced in the United States of America in the 1940s.

Snakes and Ladders, Chutes and Ladders, or Adders and Ladders became a classic children’s board game. It is played between 2 or more players on a playing board with numbered grid squares. On certain squares on the grid are drawn a number of “ladders” connecting two squares together, and a number of “snakes” or “chutes” also connecting squares together. The size of the grid (most commonly 8x8, 10x10 or 12x12) varies from board to board, as does the exact arrangement of the chutes and the ladders: both of these may affect the duration of game play.

The game has been adapted in many ways since then to serve a variety of purposes. During a national campaign (1996-99) called “Having Healthy Babies” in Sri Lanka, Malkanthie Sugathapala and Bryan Walker (working in the Birth Defects Research Unit, Kandy General Teaching Hospital) modified the game for HIV/AIDS education which was distributed to 50 countries in The Birth Research News. It has been further developed since then to be played at two levels for older children and adults allowing opportunities for adaptation by a workshop facilitator.

The game can be played by up to six players (each with a tiny pebble, button or bean which can be personally identified), at two levels:

- **It can be used at a simpler level** for an introduction to having healthy babies. You need a dice (strictly a die!) which must be thrown by each player in turn. You need a six to start and only the next throw allows the player to move his/her marker forward a corresponding number of squares. The last throw must take you exactly onto the last square (100): the first one to arrive is the winner. At this level, ignore the yellow spots. (Other rules can be added: e.g. if a player lands on a square already occupied by a marker, the first is sent back to the start). If you land on a square at the bottom of a ladder, you jump to the top. If you land on a square with the head of a snake, you slide back to the end of the tail.
- **For a more advanced game**, perhaps appropriate to the end of a workshop or education session, cut the sheet of statements into twenty cards which are shuffled and placed face down near the board. If a player lands on a yellow ‘question spot’ you take a card and decide if the statements are correct or not. Right or wrong answers are rewarded by moving backwards or forwards one or two squares accordingly. With one right answer and one wrong – you stay on the spot! The group should discuss the statements on the card after the player has moved. More statements can be added. Used cards are placed at the bottom of the pack.

On the following pages you will find the basic information for the 1st level game, supporting information and question cards applicable to the advanced game. Plus of course the game board (in two halves: just cut and tape these together).

Please send any comments on the game and its educational value to Bryan Walker (email address: walkerun@hotmail.com).

Having Healthy Babies

INTRODUCTION

In the West the incidence of spontaneous abortion in clinically recognised pregnancies is 10 to 20%, and the still birth rate is 1%. The spontaneous major birth defects rate is 2 to 3%, but this increases with age as some defects, actually present at birth, only become apparent with increasing age.

In developing countries the still birth rate is about 2% and double that of the West. The birth defects rate is generally higher as well because there are additional risk factors present in developing countries.

The World Health Organization believes that about 10% of defects can be avoided but some authorities put the possible reduction rate as high as 60%.

A reduction in birth defects and other birth anomalies can be achieved but the responsibility must be shared between mothers, fathers, families, communities and governments. And doctors!

KEY MESSAGES

Before marriage

1. Get vaccinated against German measles (*Rubella*). This infection, and some other infections, can damage the developing baby.
2. Do not marry a blood relative (i.e. the partners having at least one grandparent in common).

Before conception

3. Adopt a healthy life style. Healthy parents are most likely to have healthy babies
4. Have a health check *before* getting pregnant. Some illnesses, which are not controlled in the mother, may harm the developing baby.
5. Start folate (folic acid) supplementation to reduce the risk of damage to the embryonic brain, spinal cord and heart. This is especially important for mothers who have had an affected baby, or mothers who are taking anti-epileptic medicines.

After conception

6. Continue folate supplementation until at least the end of the third month of pregnancy
7. Avoid smokers and smoking.
8. Avoid self medication and alcohol during pregnancy.

For the family

9. Ideally, have your children between the ages of 20 and 30 with two or three years between each child.

There may always be a small minority of babies that require surgical and medical remedies at birth, but primary prevention of conceptions resulting in defective babies is more cost effective and less traumatic for families and communities than termination of faulty pregnancies (illegal in some countries) or care of disabled babies.

SUPPORTING INFORMATION

- 1. Get vaccinated against German measles (*Rubella*). This infection, and some other infections, can damage the developing baby.**

— Some infections cause only a mild illness in the mother, but severe damage to the developing baby. Some of these, such as Toxoplasmosis, can be caught from cats and dogs. Others, like Herpes, are caught from other humans. These infections can damage the baby’s heart, sight, hearing, brain or other parts of the body. Rubella is one of the worst, yet is most easily avoided, so make sure vaccination is completed before marriage or at least three months before getting pregnant. Generally avoid any infections and make sure that fever is reduced.
- 2. Do not marry a blood relative (i.e. the partners having at least one grandparent in common).**

— Parents who are married to blood relatives have a higher risk of having babies who need some medical aid at birth. Such babies have a greater chance of being still born or being born with mental and physical problems. Many congenital disorders are not seen at birth and only appear in childhood or even in adult life.
- 3. Adopt a healthy life style. Healthy parents are most likely to have healthy babies.**

— If you live in a healthy way, you can influence others to do the same. In any case healthy parents are more likely to have healthy children. Have a good balance of nutritious food, exercise and sleep. Parents should know their ideal weight for their height and not allow themselves to get overweight or underweight.
- 4. Have a health check *before* getting pregnant. Some illnesses, which can be controlled in the mother, may harm the developing baby.**

— Some diseases, if not controlled in the mother, can harm the developing baby. Mothers should have a health check for high blood pressure, diabetes, kidney diseases and anaemia before becoming pregnant. If the diseases are not controlled the mother and baby can be severely harmed.

— Thalassaemias and sickle cell disease (present in parts of Africa, Asia and Europe) affect the production of blood cells. Such illnesses can be carried in the genes (DNA) of either parent without any ill effect. However, if both parents are carriers there is a chance of 1/4 being normal, 2/4 babies becoming carriers while 1/4 may be seriously affected and need medical treatment. These defects cannot be caught by one person from another, but the effect can only be inherited.
- 5. Start folate (folic acid) supplementation to reduce the risk of damage to the embryonic brain, spinal cord and heart. This is especially important for mothers who have had an affected baby, or mothers who are taking anti-epileptic medicines.**

— Folic acid is normally present in fruit and especially green vegetables. However, as much as 80% may be destroyed by prolonged cooking. So health workers should encourage the eating of lightly cooked vegetables and fresh fruit, but in such situations especial care must be taken to clean the food. Remember that food grown near the ground is more likely to have faecal contamination than food grown at higher levels. E.g. lettuce is more likely to be contaminated than tomatoes.
- 6. Continue folate supplementation until at least the end of the third month of pregnancy.**

— Folic acid (one of the B vitamin group) is most important for normal development of the fetal brain, spinal cord and heart. It needs to be taken daily (0.4 milligrams) particularly throughout the first three months of pregnancy, and starting at least one month before conception in order to be fully effective. (When you pack your honeymoon bag – pack your folate tablets!) Mothers who have already had a baby with defects of the brain and spinal cord, or who are being treated for epilepsy, should take 4 or 5 milligrams daily during the same period.

7. Avoid smokers and smoking.

— For a long time we have known that mothers who smoke can damage the baby as well as their own health. Now we know that if the mother inhales smoke from others who are smoking, this can also damage the baby. If the father smokes in the company of a pregnant mother, the baby has a greater risk of prematurity, of low birth weight or of being affected by childhood cancers and other illnesses.

8. Avoid self medication during pregnancy.

— Many medicines should not be taken during pregnancy, but a few are relatively safe. If they are prescribed, they must be taken exactly as the doctor says. If too little is taken, the illness may not be cured. If too much is taken, it can be dangerous or even deadly. Antimalarials should be taken throughout pregnancy in endemic areas, but only as prescribed by a medical doctor.

— Avoid alcohol during pregnancy.

— Before handling chemicals used in agriculture, or for any purpose, look for warning signs on the container.

9. Ideally, have your children between the ages of 20 and 30 with two or three years between each.

— Families are best limited to two or three children with a couple of years between each child.

Physiologically, the best time for child bearing is between 20 and 30 years of age. Mothers under 20 or over 30 (especially under 18 or over 35) have more problems with their babies.

KANGAROO CARE FOR PREMATURE BABIES

Kangaroos and other pouched animals give birth to babies considered premature in other mammals. Such babies are provided with further care in the mother’s pouch where development is completed. This is the basis of the concept of ‘kangaroo care’ for human premature babies. It is given by keeping a baby underneath the dress of either parent (the baby wears only a diaper) so that there is skin to skin contact with the baby.

Kangaroo care was begun as an alternative to the use of incubators and the increased risk of infection in hospitals. It has now become popular in developing and developed countries. Babies weighing less than 1 kg have been given kangaroo care successfully. Those in incubators even with ventilators can be given short periods of kangaroo care. However, attention must be given to the education of mothers which should start before delivery.

Benefits to the baby

- ✓ Increased parent-infant bonding.
- ✓ Comfort of hearing the parents’ heart beat.
- ✓ Earlier and successful breast feeding.
- ✓ Decreased time spent in hospital.
- ✓ Increased deep sleep status.
- ✓ Decreased breathing pauses.
- ✓ Increased oxygen saturation.
- ✓ Good temperature regulation.
- ✓ Colonisation by maternal micro-organisms.
- ✓ No disadvantages of incubators (noises, light, vibration, breakdown etc.)

Benefits to the parents

- ✓ Increased parent-infant bonding.
- ✓ Increased breast milk supply.
- ✓ Earlier and continuous breast feeding.
- ✓ Increased readiness for discharge.
- ✓ Increased confidence in ability to care for babies.
- ✓ Increased sense of control.
- ✓ Increased ability to cope with stresses and emotions of having a high risk baby.

Question Cards

(Cut out into separate cards)

<p>A. PLANNING THE FAMILY</p> <ol style="list-style-type: none"> 1. For social and health reasons it is good to limit the number of children to two or three 2. The safest age for a mother to have children is between 20 and 30 	<p>B. HUSBANDS AND ANTENATAL CLINICS</p> <ol style="list-style-type: none"> 1. Antenatal clinics are only for mothers 2. Husbands will feel closer to the baby if involved in all aspects of pregnancy including attending the antenatal clinic 	<p>C. SICKNESS AND TAKING MEDICINES DURING PREGNANCY</p> <ol style="list-style-type: none"> 1. Mothers know best what they should take during pregnancy 2. Medicines can be taken during pregnancy only if taken exactly as prescribed 	<p>D. SCANS AND X-RAY EXAMINATIONS</p> <ol style="list-style-type: none"> 1. Ultrasound scans are safe during pregnancy 2. X-ray examinations are safe during pregnancy
<p>E. BABY BORN WITH SPINA BIFIDA</p> <ol style="list-style-type: none"> 1. A baby born with spina bifida is the result of bad health habits of the father 2. Following the birth of a baby with spina bifida the mother should take 4 milligrams of folic acid daily before a further pregnancy is planned 	<p>F. THALASSAEMIA</p> <ol style="list-style-type: none"> 1. If only one parent is a carrier the other parent may get the disease later in life 2. If both parents are carriers there is an increased chance of the baby getting thalassaemia 	<p>G. TRAUMA IN THE FIRST TRIMESTER</p> <ol style="list-style-type: none"> 1. The baby is too small at this stage to be at risk 2. If the mother has a serious accident or sickness during the first trimester she should consult a doctor 	<p>H. BLOOD-RELATED MARRIAGES</p> <ol style="list-style-type: none"> 1. One advantage of blood-related marriages is that wealth is kept within the family 2. Marrying a blood relative increases the chances of problems at birth
<p>I. THE USE OF CONDOMS</p> <ol style="list-style-type: none"> 1. It is dangerous to use condoms during pregnancy 2. Condoms only protect against HIV and not other sexually-transmitted infections 	<p>J. TEENAGE PREGNANCY</p> <ol style="list-style-type: none"> 1. If teenagers are healthy there are no increased risks for teenage motherhood 2. If teenagers are healthy there are no increased risks for the baby 	<p>K. FIRST PREGNANCIES</p> <ol style="list-style-type: none"> 1. First pregnancies are associated with increased risks for mothers and babies 2. Sexual intercourse should be avoided during first pregnancies 	<p>L. MOTHERS AND ANTENATAL CLINICS</p> <ol style="list-style-type: none"> 1. If mothers feel healthy there is no need for a health check before conception 2. Preconception health checks can identify anaemia, diabetes and raised blood pressure which, if untreated, could damage mother and child

<p>M. HIV/AIDS</p> <ol style="list-style-type: none"> HIV/AIDS cannot be passed from mothers to babies Sex with a young child protects fathers from HIV/AIDS 	<p>N. LOW BIRTH WEIGHT BABIES</p> <ol style="list-style-type: none"> Low birth weight babies are more at risk from infections ‘Kangaroo care’ should not be used for low birth weight babies 	<p>O. HEALTHY PARENTS</p> <ol style="list-style-type: none"> Drinking and smoking habits of the father have no increased risk for the baby A baby can be affected by the health of the mother 	<p>P. THE BEST AGE FOR CHILD BEARING</p> <ol style="list-style-type: none"> Conception at any age after 35 is good providing the mother already had a child when she was 20 to 30 years old Still births are more common in older mothers
<p>Q. IODISED SALT</p> <ol style="list-style-type: none"> Iodised salt in normal amounts can damage a baby in the womb Iodised salt is only for the health of parents 	<p>R. FOLIC ACID</p> <ol style="list-style-type: none"> The normal daily dose of folic acid for epileptic mothers is 4 or 5 milligrams Folic acid is best started in the third month of pregnancy or later 	<p>S. MEDICINES AND PREGNANCY</p> <ol style="list-style-type: none"> Medicines should never be taken during pregnancy Malaria during pregnancy should only be treated after the birth 	<p>T. BEING A VEGETARIAN</p> <ol style="list-style-type: none"> Vegetarians have difficulty in conceiving Prolonged cooking destroys most folic acid in the food


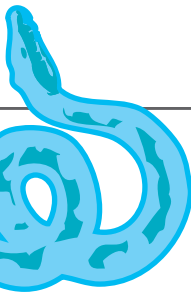
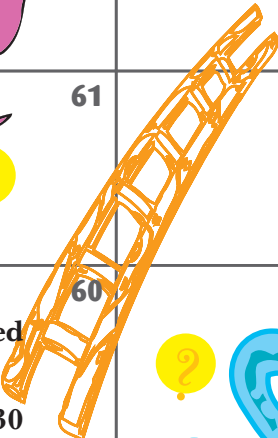

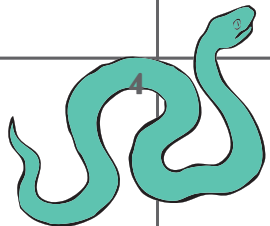
Answers to Questions

T = True. F = False.

A	1	T
	2	T
B	1	F
	2	T
C	1	F
	2	T
D	1	T
	2	F
E	1	F
	2	T
F	1	F
	2	T

G	1	F
	2	T
H	1	T
	2	T
I	1	F
	2	F
J	1	F
	2	F
K	1	T
	2	F
L	1	F
	2	T
M	1	F
	2	F

N	1	T
	2	F
O	1	F
	2	T
P	1	F
	2	T
Q	1	F
	2	F
R	1	T
	2	F
S	1	F
	2	F
T	1	F
	2	T

<p>100 Congratulations <i>...you have a</i> Healthy Baby!</p>	99	98	97	96
<p>81 Developed fever, but no time to visit a doctor</p> 	82	83	84	85
80	79	78	77	76
61	62	<p>63 Food money spent on alcohol</p> 	64	65
<p>60 Conceived between the age of 20 to 30</p> 	59	58	57	56
41	42	<p>43 Drank alcohol at a party</p> 	44	45
40	39	38	37	36
21	22	23	24	25
20	19	18	17	<p>16 Did not bother with an antenatal health check</p> 
<p>1 START</p>	<p>2 Obtained Rubella vaccination before marriage</p>	3	4	5

95	Petted the cat and a sick dog	94	93	92	91
86		87	88	Adopted Kangaroo Care for my premature baby	89
	Slept under a treated bednet to avoid malaria	75	74	73	72
	Husband and friends keep smoking in the house	66	67	68	69
55		54	53	52	51
46		47	48	49	50
35		34	33	Forgot to take folate	32
		27	28		29
15	Married an unrelated partner	14	13	12	11
6		7	8	Antenatal check for high blood pressure, anaemia and diabetes	9
					10

