

Abortion and Women's Health

This briefing note is for medical practitioners to assist them with the process of providing information for women considering abortion.

All patients have a right to information about any medical procedure they are considering. Abortion is unlike any other medical procedure in significant ways. It is most often a procedure carried out on a healthy woman and a healthy foetus.¹ Additionally, there are complex legal, social, ethical and personal questions relating to abortion that do not pertain to other procedures. Moreover, because ambivalence about an abortion decision is common², and ambivalence is related to post-abortion distress^{3,4}, medical practitioners need to take special care to ensure that they are satisfied the information provided has been properly considered.

Abortions have been conducted legally in many countries over the past few decades and considerable research has been undertaken on the physical and psychological impact on women, and also on the circumstances surrounding the decision-making process. The information that follows comes from this large body of research. It should be noted that abortion research suffers from particular obstacles, one of which is reporting bias. In a prospective study of women aged 15 to 27, the reported rate of abortion was 74% of what would be expected from national data sets.⁵

This briefing note informs medical practitioners of the issues that need to be raised with patients seeking abortions and is intended for use in conjunction with the information sheet for patients.

Motives Underlying an Abortion Decision

It is important that medical practitioners are aware of the motivating factors underlying an abortion decision. First, because there may be a need, related to a motivating factor, for referral to support services. For example, since domestic violence is strongly correlated with abortion⁶, practitioners need to ascertain whether a woman is being coerced into an abortion and at risk of physical, emotional or psychological harm. And second, because some of the motivating factors may have implications for post-abortion effects, specifically mental health effects. For example, if a woman is motivated to have an abortion because of foetal disability, her risk for psychological harm is higher than if motivated by other reasons, like not being able to cope or fear of jeopardising her future.⁷

Deciding to have an abortion is far more complex than simply not intending to become pregnant.⁸ Whilst women are motivated to seek abortions because of incest, rape, fetal abnormality or maternal health,

¹ In 2004, 98% of abortions in England and Wales were performed under categories C and D, in which cases there was no abnormality in the foetus and no pre-existent health issue in the mother. See http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4117574.pdf

² Kero A, Högberg U, Jacobsson L & Lalos A (2001) Legal abortion: a painful necessity. *Social Science and Medicine* 53:1481-1490

³ Kero A, Högberg U & Lalos A (2004) Wellbeing and mental growth – long-term effects of legal abortion. *Social Science and Medicine* 58:2559-2569

⁴ Coleman PK, Reardon DC, Strahan T & Cogle JR (2005) The psychology of abortion: a review and suggestions for future research. *Psychology and Health* 20(2):237-271

⁵ Pedersen W (2008), Abortion and depression: a population-based longitudinal study of young women, *Scandinavian Journal of Public Health* 36:424-428

⁶ Hedin LW & Janson PO (2000) Domestic violence during pregnancy: the prevalence of physical injuries, substance use, abortions and miscarriages. *Acta Obstetrica et Gynecologica Scandinavica* 79:625-630

⁷ White-Van Mourik MCA, Connor JM & Ferguson-Smith MA (1992) The psychosocial sequelae of a second-trimester termination of pregnancy for fetal abnormality. *Prenatal Diagnosis* 12:189-204

⁸ Bankole A, Singh S & Taylor H (1998) Reasons why women have induced abortions: evidence from 27 countries. *International Family Planning Perspectives* 24(3)

these represent a small percentage of total abortions.⁹ In the majority of cases, no single factor motivates women to seek abortion. Rather, a variety of factors are involved. They include relationship problems, pressure from partners and family members, study and career aspirations, financial difficulties, lack of confidence as a mother, and lack of community support.^{10,11} In a recent Australian study, the most common reason cited was “wrong time” (54%), which encapsulated several responses: “does not want children now” (23.3%), “too young” (11.2%), “not the right time” (10.8%), and “has young baby” (8.7%).¹² Additionally, more than half of women may consider themselves too young or immature.¹³

The primary reasons change somewhat when an abortion is sought in the second trimester, and include delay due to indecision, poor or absent relationship with a partner¹⁴, and lack of certainty about actually being pregnant.¹⁵

Perceived public acceptance of abortion may also contribute to a decision to abort, even though the majority of the public are personally morally opposed to abortion for the overwhelming majority of reasons, at the same time as they continue to support legal access to abortion in the majority of circumstances.¹⁶

The reasons why women find the decision to abort difficult include the humanity of the foetus, their perception of themselves and the impact of their decision upon others.¹⁷

Medical practitioners need to be aware that abortion, and especially repeat abortion, is strongly associated with domestic violence and the abuse of women.^{18,19,20,21,22,23} Moreover, authors of these studies

⁹ Abortions in these categories usually represent about 3% of all abortions. In South Australia for example, where all abortions must be notified by law, 3.3% of terminations fell within these categories. *Annual Report of the South Australian Abortion Reporting Committee* (2006)

¹⁰ Allanson S & Astbury J (1995) The abortion decision: reasons and ambivalence. *Journal of Psychosomatic Obstetrics and Gynecology* 16:123-136

¹¹ Kirkman M, Rowe H, Hardiman A & Rosenthal D (2011) Abortion is a difficult solution to a problem: A discursive analysis of interviews with women considering or undergoing abortion in Australia. *Women's Studies International Forum* 34: 121-129

¹² Rowe HJ, Kirkman M, Hardiman EA, Mallett S & Rosenthal DA (2009) Considering abortion: a 12-month audit of records of women contacting a Pregnancy Advisory Service. *Medical Journal of Australia* 190(2):69-72

¹³ Kirkman M, Rosenthal D, Mallett S, Rowe H & Hardiman A (2010) Reasons women give for contemplating or undergoing abortion: A qualitative investigation in Victoria, Australia. *Sexual and Reproductive Healthcare* 1: 149-155

¹⁴ Loeber O. & Wijzen C. (2008), Factors influencing the percentage of second trimester abortions in the Netherlands, *Reproductive Health Matters* 16 Supplement 31:30-36

¹⁵ Ingham R, Lee E, Clements SJ and Stone N (2008) Reasons for second trimester abortions in England and Wales, *Reproductive Health Matters* 16(31) Supplement, 18-29

¹⁶ While 67% of survey respondents are morally in agreement with abortion for severe foetal disability, less than 25% are morally in agreement with abortion when the grounds are late term, financial hardship, change of lifestyle, pressure from others or effect on career. Abortion for severe foetal disability represents less than 1% of all abortions. See John Fleming, Analysis of new data on Australian attitudes to abortion, pregnancy counselling and alternative ways to reduce the frequency of abortion in Australia. In: *Common Ground? Seeking an Australian Consensus on Abortion and Sex Education*. Eds. John Fleming and Nicholas Tonti-Filippini, St Pauls, Strathfield, NSW, 2007

¹⁷ Kirkman M *et al.* (2011) *Op. Cit.*

¹⁸ Hedin LW & Janson PO (2000) Domestic violence during pregnancy: the prevalence of physical injuries, substance use, abortions and miscarriages. *Acta Obstetrica et Gynecologica Scandinavica* 79:625-630

¹⁹ Taft AJ & Watson LF (2007) Termination of pregnancy: associations with partner violence and other factors in a national cohort of young Australian women. *Australian and New Zealand Journal of Public Health* 31(2):135-142

²⁰ Coker AL (2007) Does physical intimate partner violence affect sexual health? A systematic review. *Trauma, Violence, and Abuse* 8:149-177

²¹ Fanslow F, Silva M, Whitehead A & Robinson E (2008) Pregnancy outcomes and intimate partner violence in New Zealand. *Australian and New Zealand Journal of Obstetrics and Gynaecology* 48:391-397

²² Coleman PK, Maxey CD, Spence M & Nixon CL (2009) Predictors and Correlates of Abortion in the Fragile Families and Well-Being Study: Paternal Behavior, Substance Use, and Partner Violence. *International Journal of Mental Health and Addiction* 7(3):405-422

recommend that pregnant women accessing health care represents an ideal opportunity to enquire about any history of abuse.^{24,25} Furthermore, because depression and depressed mood are common in pregnancy, they may contribute to an abortion decision.²⁶

With a major decision such as abortion, it is not surprising that ambivalence is common.^{27,28} What is of particular concern is the relationship between ambivalence and the potential development of long-term post-abortion psychological distress.²⁹ This highlights the importance for medical professionals to provide adequate psychological support and guidance in decision-making “in order to avoid impulsive and not fully internalized decisions”.³⁰

There are two other risk factors for later psychological distress of which medical professionals need to be aware. The first of these is moral opposition to abortion. Women have abortions despite being morally opposed to them³¹, which might indicate the presence of coercive influences in favour of abortion.³² Studies have identified more negative post-abortion effects when women are morally opposed to abortion.³³

The second risk factor is abortion for foetal disability or disease. Abortions of this type lead to more severe consequences not only for the woman but also for her partner. Numerous studies have identified a high incidence of negative emotions³⁴, psychological distress³⁵, post-traumatic symptoms³⁶ and somatic complaints.³⁷ Furthermore, women may not be fully aware of the role and consequences of screening for foetal disability. For example, in relation to screening for Down’s Syndrome, researchers found that only 37% of decisions were informed, 31% did not know that miscarriage was a potential consequence of amniocentesis, and only 62% knew that abortion would be offered if Down’s Syndrome were identified.³⁸

²³ Silverman JG, Decker MR, McCauley HR, Gupta J, Miller E, Raj A & Goldberg AB (2010) Male perpetration of intimate partner violence and involvement in abortions and abortion-related conflict. *American Journal of Public Health* 100 (8)

²⁴ Taft AJ, Watson LF & Lee C (2004) Violence against young Australian women and association with reproductive events: a cross-sectional analysis of a national population sample. *Australian and New Zealand Journal of Public Health* 28(4):324-9

²⁵ Woo J, Fine P & Goetzl L (2005) Abortion disclosure and the association with domestic violence. *Obstetrics and Gynecology* 105:1329-34

²⁶ Burgoine GA, Van Kirk SD, Romm J, Edelman AB, Jacobson SL and Jensen JT (2005) Comparison of perinatal grief after dilation and evacuation or labor induction in second trimester terminations for fetal anomalies. *American Journal of Obstetrics and Gynecology* 192(6):1928-1932

²⁷ Törnblom M, Ingelhammar E, Lilja H, Svanberg B & Möller A (1999) Decision-making about unwanted pregnancy. *Acta Obstetrica et Gynecologica Scandinavica* 78:636-641

²⁸ Kirkman M *et al.* (2010) *Op. Cit.*

²⁹ Söderberg H, Janzon L & Sjöberg NO (1998) Emotional distress following induced abortion. A study of its incidence and determinants among abortees in Malmö, Sweden. *European Journal of Obstetrics & Gynecology and Reproductive Biology* 79:173-8

³⁰ Korenromp MJ, Christiaens GC, van den Bout J, Mulder EJ, Hunfeld JA, Bilardo CM, Offermans JP & Visser GH (2005) Long-term psychological consequences of pregnancy termination for fetal abnormality: a cross-sectional study. *Prenatal Diagnosis* 25:253-260

³¹ Allanson S & Astbury J (1995) *Op. Cit.*

³² Adamczyk A (2008) The effects of religious contextual norms, structural constraints, and personal religiosity on abortion decisions. *Social Science Research* 37:657-672

³³ Rue VM, Coleman PK, Rue JJ & Reardon DC (2004) Induced abortion and traumatic stress: a preliminary comparison of American and Russian women. *Medical Science Monitor* 10(10):SR5-16

³⁴ White-Van Mourik MCA *et al.* (1992) *Op. Cit.*

³⁵ Davies V, Gledhill J, McFadyen A, Whitlow B & Economides D (2005) Psychological outcome in women undergoing termination of pregnancy for ultrasound-detected fetal anomaly in the first and second trimesters: a pilot study. *Ultrasound in Obstetrics & Gynecology* 25:389-392

³⁶ Korenromp MJ *et al.* (2005) *Op. Cit.*

³⁷ White-Van Mourik MCA *et al.* (1992) *Op. Cit.*

³⁸ Rowe HJ, Fisher JRW & Quinlavin JA (2006) Are pregnant Australian women well informed about prenatal genetic screening? A systematic investigation using the Multidimensional Measure of Informed Choice. *Australian and New Zealand Journal of Obstetrics and Gynaecology* 46:433-439

Other risk factors for abortion include having poor emotional support, living alone, prior psychiatric illness, and not receiving counselling.³⁹ Furthermore, given that not receiving counselling has been shown to be a risk factor for abortion, counselling that encourages abortion is likely to also be a risk factor for abortion.

Methods of Abortion

The developmental age of the embryo/foetus at the time of abortion may be an important consideration for some women. A woman may want to know the size and characteristics of the embryo/foetus before she comes to a final decision. In that case, accurate information based on the best scientific and diagnostic evidence needs to be made available. Later gestational stages may attract a higher degree of moral ambivalence, which might increase the risk of post-abortion effects. Furthermore, since different procedures may be indicated for different gestational ages, what method will be used is also important. Sufficient detail about the procedure itself needs to be made known.

It is possible that some women may ask for information about foetal sentience and foetal pain. Whilst this is a controversial issue and not well understood, it is possible, depending upon developmental age, that the foetus will experience pain.⁴⁰ The presence of the nervous system, even at an early stage, is sufficient for this possibility to be seriously considered.

Physical Effects of Abortion

There have been many studies aimed at determining the risks, both physical and psychological, associated with abortion. Some published research begins and ends with the assertion that abortion, both medical and surgical, is 'safe'. However, risk and safety are subjective notions and simple assertions are not necessarily helpful. With regard to an abortion procedure, it is the woman herself who will interpret what the risks are, and whether she considers abortion 'safe' or not. Importantly, given the ongoing nature of much abortion research, definitive statements about safety may be inappropriate.

- Risk of death resulting directly from complications during abortion is rare, but increases with each week of gestation.⁴¹ When deaths from all causes are examined in the first year following an abortion, several studies have identified an increased risk compared either to giving birth or never being pregnant, although causality has not been confirmed.^{42,43,44} There are several possible explanations for this. Women who have abortions may already take more risks or care less for their health. Alternatively, they may experience stress after an abortion that is linked to it, or abortion itself may produce psychological stresses that increase the risk of death.⁴⁵
- Medical abortion confers a small but specific risk of death resulting from infection with *Clostridium sordellii*.^{46,47,48} This can be decreased with infection control measures.^{49,50}

³⁹ Söderberg H *et al.* (1998) *Op. Cit.*

⁴⁰ McCullagh P (1996) *Foetal Sentience*, London, All-Party Parliamentary Pro-Life Group

⁴¹ Diedrich J & Steinauer J (2009) Complications of surgical abortion. *Clinical Obstetrics and Gynecology* 52(2):205-212

⁴² Reardon DC, Strahan TW, Thorp JM Jr & Shuping MW (2002) Deaths associated with pregnancy outcome: a record linkage study of low income women. *Southern Medical Journal* 95(8):834-841

⁴³ Gissler M, Berg C, Bouvier-Colle MH & Buekens P (2004) Pregnancy-associated mortality after birth, spontaneous abortion, or induced abortion in Finland, 1987-2000. *American Journal of Obstetrics and Gynecology* 190(2):422-7

⁴⁴ Gissler M, Hemminki E & Lönnqvist J (1996) Suicides after pregnancy in Finland, 1987-94: register linkage study. *British Medical Journal* 313:1431-4

⁴⁵ Reardon DC *et al.* (2002) *Op. Cit.*

⁴⁶ Hamoda H & Templeton A (2010) Medical and surgical options for induced abortion in first trimester, *Best Practice and Research Clinical Obstetrics and Gynaecology* 24(4):503-516

⁴⁷ Kaponis, A, Papatheodorou, S. & Makrydimas G (2010) Septic shock due to Klebsiella pneumonia after medical abortion with misoprostol-only regimen. *Fertility and Sterility* 94(4):1529.e3-e5

- Many studies have identified an increased risk of premature delivery^{51,52,53,54,55} and very premature delivery⁵⁶ in future pregnancies among women who have had abortions. However, others have not found any association.^{57,58} Recent work has raised the possibility that repeat abortions may have a cumulative effect on subsequent preterm births.^{59,60} Two recent reviews confirm the relationship between abortion and subsequent preterm births.^{61,62} The risk of subsequent preterm and very preterm deliveries following medical abortion remains unclear, although at least one recent study suggests there may be a link.⁶³
- Infection can result from abortion, leading to an increased risk of infertility.⁶⁴ This risk is particularly relevant where there is a pre-existing genital infection.⁶⁵ Abortion complicated by infection has also been associated with an increased risk of stillbirth.⁶⁶
- Although the risk is slight, abortion increases the risk of uterine perforation during subsequent abortions.⁶⁷

⁴⁸ Meites E, Zane S & Gould C (2010) Fatal Clostridium sordellii infections after medical abortions. *New England Journal of Medicine* 363(14):1382-3

⁴⁹ Fjerstad M, Trussell J, Lichtenberg ES, Sivin I & Cullins V (2011) Severity of infection following the introduction of new infection control measures for medical abortion. *Contraception* 83:330-335

⁵⁰ Fjerstad M, Trussell J, Sivin I, Lichtenberg ES & Cullins V (2009) Rates of serious infection after changes in regimens for medical abortion. *New England Journal of Medicine* 361(2):145-151

⁵¹ Ancel PY, Lelong N, Papiernik E, Saurel-Cubizolles MJ & Kaminski M (2004) History of induced abortion as a risk factor for preterm birth in European countries: results of the EUROPOP study. *Human Reproduction* 19(3):734-40

⁵² Brown JS Jr, Adera T & Masho SW (2008) Previous abortion and the risk of low birth weight and preterm births. *Journal of Epidemiology and Community Health* 62(1):16-22

⁵³ Swingle HM, Colaizy TT, Zimmerman MB & Morriss FH (2009) Abortion and the risk of subsequent preterm birth: a systematic review with meta-analysis. *The Journal of Reproductive Medicine* 54:95-108

⁵⁴ Van Oppenraaij RH, Jauniaux E, Christiansen OB, Horcajadas JA, Farquharson RG & Exalto N (2009) Predicting adverse obstetric outcome after early pregnancy events and complications: a review. *Human Reproduction Update* 15(4): 409-421

⁵⁵ Shah PS & Zao J (2009) [Induced termination of pregnancy and low birthweight and preterm birth: a systematic review and meta-analyses](#). *British Journal of Obstetrics & Gynaecology* 116(11):1425-42

⁵⁶ Moreau C, Kaminski M, Ancel PY, Bouyer J, Escande B, Thiriez G, Boulot P, Fresson J, Arnaud C, Subtil D, Marpeau L, Rozé JC, Maillard F & Larroque B (2005) Previous induced abortions and the risk of very preterm delivery: results of the EPIPAGE study. *British Journal of Obstetrics & Gynaecology* 112(4):430-7

⁵⁷ Raatikainen K, Heiskanen N & Heinonen S (2006) Induced abortion: not an independent risk factor for pregnancy outcome, but a challenge for health counselling. *Annals of Epidemiology* 16(8):587-592

⁵⁸ Reime B, Schücking BA & Wenzlaff P (2008) Reproductive outcomes in adolescents who had a previous birth or induced abortion compared to adolescent's first pregnancies. *BMC Pregnancy Childbirth* 8:4

⁵⁹ Watson LF, Rayner JA, King J, Jolley D, Forster D & Lumley J (2010) Modelling sequence of prior pregnancies on subsequent risk of very preterm birth. *Paediatric and Perinatal Epidemiology* 24(5):416-23

⁶⁰ Voigt M, Henrich W, Zygmunt M, Friese K, Straube S & Briese V (2009) Is induced abortion a risk factor in subsequent pregnancy? *Journal of Perinatal Medicine* 37:144-149

⁶¹ Swingle H. M, Colaizy TT, Zimmerman MB & Morriss FH (2009) Abortion and the risk of subsequent preterm birth: a systematic review with meta-analysis. *The Journal of Reproductive Medicine* 54:95-108

⁶² Van Oppenraaij RHF, Jauniaux E, Christiansen OB, Horcajadas JA, Farquharson RG & Exalto N (2009) Predicting adverse obstetric outcome after early pregnancy events and complications: a review. *Human Reproduction Update* 15(4):409-421

⁶³ Mirmilstein V, Rowlands S & King JF (2009) Outcomes for subsequent pregnancy in women who have undergone misoprostol mid-trimester termination of pregnancy. *Australian and New Zealand Journal of Obstetrics and Gynaecology* 49:195-197

⁶⁴ Wallach EE (1990) Fertility after contraception or abortion. *Fertility and Sterility* 54(4):559-573

⁶⁵ Smith CD, Carlin EM, Heason J, Liu DT, Jushuf IA & Hammond RH (2001) Genital infection and termination of pregnancy: are patients still at risk? *Journal of Family Planning and Reproductive Health Care* 27(2):81-84

⁶⁶ Zhou W & Olsen J (2003) Are complications after an induced abortion associated with reproductive failures in a subsequent pregnancy? *Acta Obstetrica et Gynecologica Scandinavica* 82:177-181

- Previous abortion is a risk factor for placenta praevia⁶⁸, although not when the method used is vacuum aspiration.⁶⁹
- Studies have identified abortion as a risk factor for later miscarriage.^{70,71} Furthermore, women with a history of foetal loss, either miscarriage or abortion, appear more likely to experience an unexplained foetal death in later pregnancies.⁷²
- Abortion may confer a risk for low birth weight in later pregnancies^{73,74}, although this association may be weak.⁷⁵
- Abortion may influence later fecundity. While it appears that women who have had abortions have an above average fecundity, there may be a “genuine reduction in the formerly high fecundity of those who undergo TOP [termination of pregnancy]”.⁷⁶
- Whether breast cancer risk is elevated by abortion is a controversial question that has been the subject of numerous studies, several showing increased risk^{77,78,79,80} and some showing none.^{81,82,83} The field remains in dispute^{84,85}, partly due to problems in some studies where research design has been poor. Problems include failure to ensure adequate follow-up time, use of inaccurate abortion registers, choosing inappropriate study populations and not adequately dealing with under-reporting of abortion. At the very least, women presenting for

⁶⁷ Pridmore BR & Chambers DG (1999) Uterine perforation during surgical abortion: a review of diagnosis, management and prevention. *Australian and New Zealand Journal of Obstetrics and Gynaecology* 39(3):349-53

⁶⁸ Faiz AS & Ananth CV (2003) Etiology and risk factors for placenta previa: an overview and meta-analysis of observational studies. *Journal of Maternal-Fetal and Neonatal Medicine* March 13(3):175-90

⁶⁹ Johnson LG, Mueller BA & Daling JR (2003) The relationship of placenta previa and history of induced abortion. *International Journal of Gynecology and Obstetrics* 81:191-198

⁷⁰ Infante-Rivard C & Gauthier R (1996) Induced abortion as a risk factor for subsequent fetal loss. *Epidemiology* 7:540-542

⁷¹ Sun Y, Che Y, Gao E, Olsen J & Zhou W (2003) Induced abortion and risk of subsequent miscarriage. *International Journal of Epidemiology* 32(3):449-54

⁷² Measey MA, Tursan d'Espaignet E, Charles A & Douglass C (2009) Unexplained fetal death: are women with a history of fetal loss at higher risk? *Australian and New Zealand Journal of Obstetrics and Gynaecology* 49(2):151-157

⁷³ Zhou W, Sørensen HT & Olsen J (2000) Induced abortion and low birth weight in the following pregnancy. *International Journal of Epidemiology* 29:100-106

⁷⁴ Jackson JE, Grabman WA, Haney E. & Casele H (2007) Mid-trimester dilation and evacuation with laminaria does not increase the risk for severe subsequent pregnancy complications. *International Journal of Gynecology and Obstetrics* January 96(1):12-15

⁷⁵ Henriët L & Kaminski M (2001) Impact of induced abortions on subsequent pregnancy outcome: the 1995 French national perinatal survey. *British Journal of Obstetrics and Gynaecology* 108(10):1036-42

⁷⁶ Hassan MA & Killick SR (2005) Is previous aberrant reproductive outcome predictive of subsequently reduced fecundity? *Human Reproduction* March 20(3):657-664

⁷⁷ Brind J, Chinchilli VM, Severs WB & Summy-Long J (1996) Induced abortion as an independent risk factor for breast cancer: a comprehensive review and meta-analysis. *Journal of Epidemiology and Community Health* 50:481-96

⁷⁸ Daling JR, Malone KE, Voigt LF, White E & Weiss NS (1994) Risk of breast cancer among young women: relationship to induced abortion. *Journal of the National Cancer Institute* 86(21):1584-92

⁷⁹ Daling JR, Brinton LA, Voigt LF, Weiss NS, Coates RJ, Malone KE, Schoenberg JB & Gammon M (1996) Risk of breast cancer among white women following induced abortion. *American Journal of Epidemiology* Aug 15, 144(4):373-80

⁸⁰ Ozmen V, Ozcinar B, Karanlik H, Cabioglu N, Tukenmez M, Disci R, Ozmen T, Igci A, Muslumanoglu M, Kecer M & Soran A (2009) Breast cancer risk factors in Turkish women – a University Hospital based nested case control study, *World Journal of Surgical Oncology* 7:37 Available from <http://www.wjso.com/content/7/1/37>

⁸¹ Beral V, Bull D, Doll R, Peto R & Reeves G (2004) Breast cancer and abortion: collaborative reanalysis of data from 53 epidemiological studies, including 83,000 women with breast cancer from 16 countries. *Lancet* 363:1007-16

⁸² Ye Z, Gao DL, Qin Q, Ray RM & Thomas DB (2002) Breast cancer in relation to induced abortions in a cohort of Chinese women. *British Journal of Cancer* 87:977-981

⁸³ Beral V *et al.* (2004) *Op. Cit.*

⁸⁴ Brind J (2009) The abortion-breast cancer connection. *Specialty Law Digest. Health Care Law* 340:9-35

⁸⁵ Rowlands S (2011) Misinformation on abortion. *European Journal of Contraception and Reproductive Health Care* 16(4):233-40

abortion need to be made aware of the intense research interest in this matter, and the divergent views of researchers. However, what is of direct relevance to women considering abortion is the well established fact that carrying a first pregnancy to birth is protective against breast cancer.^{86,87} In terms that are of direct relevance to a woman considering abortion, this means that a woman will have higher breast cancer risk if she undergoes an abortion compared to carrying to term. It is a requirement of being properly informed that a woman be provided with this piece of information.

- There are a variety of regimens for medical abortion, making generalisations difficult. Abortion using RU486 is associated with specific contraindications as well as physical risks including haemorrhage, pain, insomnia, vaginal bleeding, abdominal cramping, nausea, vomiting, diarrhoea, headache, muscle weakness, dizziness, fatigue, viral infections, fever, chills, backache, difficulty in breathing, rise in temperature and fall in blood pressure.⁸⁸ The most frequent symptoms are abdominal pain (56%), nausea (54%), tiredness (50%), breast pain (28%), and heavy vaginal bleeding (10%).⁸⁹ Medical abortion has a fourfold higher rate of adverse events compared with surgical abortion - haemorrhage 15.6% compared with 2.1%; incomplete abortion 6.7% compared with 1.6%; and, surgical re-evacuation 5.9% compared with 1.8%^{90,91}; and, women undergoing medical abortion in the early stages of pregnancy are hospitalised at a higher rate (5.4%) compared with surgical abortion (0.4%).⁹² Parous women and women with prior caesarean section are at higher risk of incomplete medical abortion.⁹³ For first trimester abortions, medical abortion did not increase the risks in future pregnancies of miscarriage, ectopic pregnancy, preterm birth, or low birth weight compared to surgical abortion.⁹⁴ However, in the second trimester, medical abortions were associated with more adverse events than surgical abortions.^{95,96,97,98} Women should be informed that a medical abortion requires more patient participation than a surgical abortion, and that they will be more aware of the physical aspects of the process.^{99,100}

⁸⁶ Verlinden I, Gungör N, Wouters K, Janssens J, Raus J & Michiels L (2005) Parity-induced changes in global gene expression in the human mammary gland. *European Journal of Cancer Prevention* Apr, 14(2):129-37

⁸⁷ Russo IH & Russo J (2011) Pregnancy-induced changes in breast cancer risk. *Journal of Mammary Gland Biology and Neoplasia* 16(3):221-33

⁸⁸ See US FDA site about RU486 <http://www.fda.gov/cder/drug/infopage/mifepristone/default.htm>

⁸⁹ Bartz D & Goldberg A (2009) Medication abortion. *Clinical Obstetrics and Gynecology* 52(2):140-150

⁹⁰ Niinimäki M, Pouta A, Bloigu A, Gissler M, Hemminki E, Suhonen & Heikinheimo O (2009) Frequency and risk factors for repeat abortions after surgical compared with medical termination of pregnancy. *Obstetrics & Gynecology* 113(4):845-852

⁹¹ Niinimäki M, Pouta A, Bloigu A, Gissler M, Hemminki E, Suhonen S & Heikinheimo O (2009) Immediate complications after medical compared with surgical termination of pregnancy. *Obstetrics & Gynecology* 114(4):795-804

⁹² Mulligan E & Messenger H (2011) Mifepristone in South Australia: The first 1343 tablets. *Australian Family Physician* 40(5):342-345

⁹³ Chien LW, Liu WM, Tzeng CR & Au HK (2009) Effect of previous live birth and prior route of delivery on the outcome of early medical abortion. *Obstetrics & Gynecology* 113(3):669-674

⁹⁴ Virk J, Zhang J & Olsen J (2007) Medical abortion and the risk of subsequent adverse pregnancy outcomes. *New England Journal of Medicine* 357(7):648-653

⁹⁵ Grossman D, Blanchard K & Blumenthal P (2008) Complications after second trimester surgical and medical abortion. *Reproductive Health Matters* 16(31) Supplement 173-182

⁹⁶ Autry AM, Hayes EC, Jacobson GF & Kirby RS (2001) A comparison of medical induction and dilation and evacuation for second-trimester abortion. *American Journal of Obstetrics and Gynecology* 187:393-7

⁹⁷ Slade P, Heke S, Fletcher J & Stewart P (2001) Termination of pregnancy: patients' perceptions of care. *The Journal of Family Planning and Reproductive Health Care* 27(2):72-77

⁹⁸ Mentula MJ, Niinimäki M, Suhonen S, Hemminki E, Gissler M & Heikinheimo O (2011) Immediate adverse events after second trimester medical termination of pregnancy: results of a nationwide registry study. *Human Reproduction* 26(4):927-932

⁹⁹ Bartz D & Goldberg A (2009), *Op. Cit.*

Psychological Effects of Abortion

The highly complex psychology of abortion has been examined by hundreds of researchers over previous decades, with a diversity of methodologies and interpretations. In precise scientific terms the question of causality cannot be answered definitively as it is not possible to conduct a randomised controlled trial assigning some women to an abortion group and others to a birth group. Therefore, most studies examine the *association* between abortion and mental health. Reviews of the field have arrived at disparate conclusions.^{101,102,103,104} A potential weakness of some studies is the failure to follow psychological effects for long enough – a few months or even years may be too short a time frame.¹⁰⁵ Phenomenological research suggests that women may cope well initially, but years later reappraise the event negatively.^{106,107}

Recently, some reviews have relied strongly upon a paper by Danish researchers claiming to show that abortion does not lead to mental health problems¹⁰⁸, but instead prior poor mental health is followed after abortion by a similar level of poor mental health. However, there are significant weaknesses with the study which limit its applicability, and quality follow up studies are urgently needed.

Some researchers have also argued that poor mental health is associated with an unwanted pregnancy rather than abortion *per se*, but this interpretation relies upon “unwantedness” being a useful and readily definable term, which it is not.^{109,110,111,112,113}

Despite the controversy in the field, some women describe their own experiences of abortion as linked to mental harm.^{114,115,116,117}

¹⁰⁰ Kelly T, Suddes J, Howel D, Hewison J & Robson S (2010) Comparing medical versus surgical termination of pregnancy at 13-20 weeks gestation: a randomised controlled trial. *British Journal of Obstetrics and Gynaecology* 117:1512-1520

¹⁰¹ American Psychological Association (2008) *Report on the Task Force on Mental Health and Abortion*. Washington DC

¹⁰² Charles VE, Polis CB, Sridhara SK & Blum RW (2008) Abortion and long-term mental health outcomes: a systematic review of the evidence. *Contraception* 78:436-450

¹⁰³ Major B, Applebaum M, Beckman L, Dutton MA, Russo NF & West C (2009) Abortion and Mental Health: Evaluating the Evidence. *American Psychologist* 64(9):863-890

¹⁰⁴ Coleman PK (2011) Abortion and mental health: quantitative synthesis and analysis of research published 1995-2009. *The British Journal of Psychiatry* 199(03):180-186

¹⁰⁵ Trybulski J (2005) The long-term phenomena of women’s postabortion experiences. *Western Journal of Nursing* 27(5):577-582

¹⁰⁶ Goodwin P & Ogden J (2007) Women’s reflections upon their past abortions: An exploration of how and why emotional reactions change over time. *Psychology and Health* 22(2):231-248

¹⁰⁷ Trybulski J (2006) Women and abortion: the past reaches into the present. *Journal of Advanced Nursing* 54(6):683-690

¹⁰⁸ Munk-Olsen T, Laursen TM, Pedersen CB, Lidegaard O & Mortensen PB (2011) Induced first-trimester abortion and risk of mental disorder. *New England Journal of Medicine* 364(4):332-9

¹⁰⁹ Pulley L, Klerman LV, Tang H & Baker BA (2002) The extent of pregnancy mistiming and its association with maternal characteristics and behaviours and pregnancy outcomes. *Perspectives on Sexual and Reproductive Health* 34(4):206-211

¹¹⁰ Finer LB & Henshaw SK (2006) Disparities in rates of unintended pregnancy in the United States 1994-2001. *Perspectives on Sexual and Reproductive Health* 38(2):90-96

¹¹¹ Barrett G & Wellings K (2002) What is a ‘planned’ pregnancy? empirical data from a British study. *Social Science and Medicine* 55:545-557

¹¹² Kirkman M, Rosenthal D, Mallett S, Rowe H & Hardiman A (2010) Reasons women give for contemplating or undergoing abortion: A qualitative investigation in Victoria, Australia. *Sexual and Reproductive Healthcare* 1: 149-155

¹¹³ Williams L, Piccinino L, Abma J & Arguillas F (2001) Pregnancy wantedness: attitude stability over time. *Social Biology* 48(3):212-233

Aside from psychological conditions, numerous studies have identified emotional distress immediately after abortion and in the months following. Women experience a range of emotions after abortion, including sadness, loneliness, shame, guilt, grief, doubt and regret.^{118,119,120,121,122,123} However, some studies also identify positive reactions like relief, happiness and satisfaction.¹²⁴ In the longer term, women exhibited cognitive dissonance, describing their abortions of 10 years or more ago in terms of negative emotions yet believing the correct choice was made.¹²⁵ Specific strategies of avoidance were used to cope.

Among US college students - women who had an abortion and men whose partners had an abortion – one third of women and one third of men were uncomfortable and expressed regret about the abortion decision.¹²⁶ A third of men and women also experienced a sense of longing for the aborted foetus. Moreover, they often use terms like “child” or “baby” to describe their loss.

- Results from a 2006 New Zealand study¹²⁷ on mental health and abortion confirm other work showing a link between the two.¹²⁸ The New Zealand study revealed that 42% of women who had an abortion experienced major depression in the four years prior to interview. This is nearly twice the rate of those who had never been pregnant and 35 % higher than those who had continued their pregnancy. This study also showed that abortion increased the risk of anxiety disorders. The same research team undertook a more detailed follow up study correcting carefully for possible confounders, in which their earlier findings were confirmed.¹²⁹ In the more recent study, they concluded that women who had abortions experienced mental health disorders 30% more often compared to women who had not had an abortion. The authors went further to suggest that there were good grounds for causality, but more work needs to be done before strong definitive statements about abortion causing mental health disorders can be made. Another more recent paper from this group showed that the extent to which women reported an adverse reaction to abortion correlated with the extent of mental health disorders.¹³⁰ Other researchers have also found a link between abortion and depression^{131,132,133}, although some groups have not been able to confirm this.^{134,135} With regard

¹¹⁴ Goodwin P & Ogden J (2007) Women’s reflections upon their past abortions: an exploration of how and why emotional reactions change over time. *Psychology and Health* 22(2):231-248

¹¹⁵ Trybulski J (2005) The long-term phenomena of women’s post-abortion experiences. *Western Journal of Nursing* 27(5):577-582

¹¹⁶ Trybulski J (2006) Women and abortion: the past reaches into the present. *Journal of Advanced Nursing* 54(6):683-690

¹¹⁷ Fergusson DM, Horwood LJ & Boden JM (2009) Reactions to abortion and subsequent mental health. *The British Journal of Psychiatry* 195:420-426

¹¹⁸ Kero A et al. (2001) *Op. Cit.*

¹¹⁹ Kero A et al. (2004) *Op. Cit.*

¹²⁰ Fergusson DM, Horwood LJ & Ridder EM (2006) Abortion in young women and subsequent mental health. *Journal of Child Psychology and Psychiatry* 47(1):16-24

¹²¹ Fergusson DM et al. (2009) *Op. Cit.*

¹²² Hess RF (2004) Dimensions of women’s long-term postabortion experience. *The American Journal of Maternal Child Nursing* 29(3):193-198.

¹²³ Korenromp MJ et al. (2005) *Op. Cit.*

¹²⁴ Fergusson DM et al. (2009) *Op. Cit.*

¹²⁵ Dykes K, Slade P & Haywood A (2011) Long term follow-up of emotional experiences after termination of pregnancy: women’s views at menopause. *Journal of Reproductive and Infant Psychology* 29(1):93-112

¹²⁶ Coleman PK & Nelson ES (1998) The quality of abortion decisions and college students’ reports of post-abortion emotional sequelae and abortion attitudes. *Journal of Social and Clinical Psychology* 17(4):425-442

¹²⁷ Fergusson DM et al. (2006) *Op. Cit.*

¹²⁸ Reardon DC & Cogle JR (2002) Depression and unintended pregnancy in the National Longitudinal Survey of Youth: a cohort study. *British Medical Journal* 324:151-2

¹²⁹ Fergusson DM, Horwood LJ & Boden JM (2008) Abortion and mental health disorders: evidence from a 30-year longitudinal study. *British Journal of Psychiatry* 193(6):444-451

¹³⁰ Fergusson DM et al. (2009) *Op. Cit.*

¹³¹ Pedersen W (2008) *Op. Cit.*

to post-abortion anxiety and possibly depression, others have found these mood disorders to be related to pre-abortion factors rather than to the abortion itself.^{136,137,138}

- A small proportion of women develop post traumatic stress disorder (PTSD) following abortion.^{139,140} This may be related to cultural factors.¹⁴¹ More recent studies have confirmed an elevated risk of PTSD after abortion which weakened but persisted after controlling for confounders.^{142,143} In one of these studies, abortions later in pregnancy were associated with higher PTSD scores.¹⁴⁴ Incidence of first psychiatric contact for neurotic, stress-related or somatoform disorder was elevated 2-3 months after an abortion.¹⁴⁵
- Several studies have identified other psychiatric complications following abortion, and women who have an abortion are at higher risk of psychiatric admission compared with women who carried to term.^{146,147} In a Californian study, women who had an abortion were over-represented in treatment categories that included bipolar disorder, neurotic depression and schizophrenic disorders.¹⁴⁸ Nevertheless, a major UK study did not identify a difference in total psychiatric disorders between aborting women and those who carried to term.¹⁴⁹ With regard to bipolar disorders, some researchers have found an association¹⁵⁰, while others have not.¹⁵¹
- The UK study referred to above did however identify an increase in deliberate self-harm, which includes substance abuse.¹⁵² Among women whose first pregnancy was unintended, those who had an abortion were at greater risk of substance abuse compared with those who carried their unintended pregnancy to term.¹⁵³ When pregnancy was assessed in relation to past perinatal

¹³² Rees DI & Sabia JJ (2007) The relationship between abortion and depression: new evidence from the fragile families and child wellbeing study. *Medical Science Monitor* 13(10):CR430-6

¹³³ Coleman PK, Coyle CT, Shuping M & Rue VM (2009) Induced abortion and anxiety, mood, and substance abuse disorders: Isolating the effects of abortion in the national comorbidity survey. *Journal of Psychiatric Research* 43:770-776

¹³⁴ Steinberg JR & Finer LB (2011) Examining the association of abortion history and current mental health: A reanalysis of the National Comorbidity Survey using a common-risk-factors model. *Social Science & Medicine* 72:72-82

¹³⁵ Warren JT, Harvey SM & Henderson JT (2010) Do Depression and Low Self-Esteem Follow Abortion Among Adolescents? Evidence from a National Study. *Perspectives on Sexual and Reproductive Health* 42(4):230-235

¹³⁶ Steinberg JR & Russo NF (2008) Abortion and anxiety: what's the relationship? *Social Science & Medicine* 67(2):238-52. Epub 2008 May 28

¹³⁷ Gissler M, Artama M, Ritvanen A & Wahlbeck K (2010) Use of psychotropic drugs before pregnancy and the risk for induced abortion: population-based register-data from Finland 1996-2006. *BMC Public Health* 383:1-10

¹³⁸ Mota NP, Burnett M & Sareen J (2010) Associations Between Abortion, Mental Disorders, and Suicidal Behaviour in a Nationally Representative Sample. *The Canadian Journal of Psychiatry* 55(4)

¹³⁹ Rue VM *et al.* (2004) *Op. Cit.*

¹⁴⁰ Broen AN, Moum T, Bødtker AS & Ekeberg O (2004) Psychological impact on women of miscarriage versus induced abortion: a 2-year follow-up study. *Psychosomatic Medicine* 66:265-271

¹⁴¹ Rue VM *et al.* (2004) *Op. Cit.*

¹⁴² Mota NP *et al.* (2010) *Op. Cit.*

¹⁴³ Coleman PK, Coyle CT & Rue VM (2010) Late-Term Elective Abortion and Susceptibility to Posttraumatic Stress Symptoms. *Journal of Pregnancy* 2010:1-10

¹⁴⁴ Coleman PK *et al.* (2010) *Op. Cit.*

¹⁴⁵ Munk-Olsen T *et al.* (2011) *Op. Cit.*

¹⁴⁶ Reardon DC, Cogle JR, Rue VM, Shuping MW, Coleman PK & Ney PG (2003) Psychiatric admissions of low-income women following abortion and childbirth. *Canadian Medical Association Journal* 168(10):1253-6

¹⁴⁷ Munk-Olsen T *et al.* (2011) *Op. Cit.*

¹⁴⁸ Coleman PK, Reardon DC, Rue V & Cogle J (2002) State-funded abortions vs deliveries: a comparison of outpatient mental health claims over four years. *American Journal of Orthopsychiatry* 72:141-152

¹⁴⁹ Gilchrist AC, Hannaford PC, Frank P & Kay CR (1995) Termination of pregnancy and psychiatric morbidity. *British Journal of Psychiatry* 167:243-8

¹⁵⁰ Coleman PK, Coyle CT, Shuping M & Rue VM (2009) *Op. Cit.*

¹⁵¹ Mota NP *et al.* (2010) *Op. Cit.*

¹⁵² Gilchrist AC *et al.* (1995) *Op. Cit.*

¹⁵³ Reardon DC, Coleman PK & Cogle JR (2004) Substance use associated with unintended pregnancy outcomes in the National Longitudinal Survey of Youth. *American Journal of Drug and Alcohol Abuse* May 30(2):369-83

loss - which included abortion, stillbirth and miscarriage - only abortion was found to be associated with an increased risk of substance abuse during that pregnancy.¹⁵⁴ Other research has confirmed the relationship between abortion and substance abuse, perhaps as an attempt to cope with emotional loss.^{155,156,157} It may be that of all the mental health problems related to abortion, substance abuse might contribute most to the community mental health burden.^{158,159,160}

- Sleep disorders and disturbances are more common in women with a history of abortion.¹⁶¹
- Several studies have identified relationship problems between couples where there has been a history of abortion, manifesting as sexual dysfunction.^{162,163,164,165}
- Some evidence exists for a 'replacement pregnancy' phenomenon, where a subsequent pregnancy may be seen as a way of resolving grief and stress about an abortion.¹⁶⁶

The Special Case of Abortion for Foetal Abnormality

There is a solid body of evidence showing that when an abortion is undertaken for reasons of foetal abnormality the after effects can be particularly traumatic. Health professionals need to be aware that strong and persisting grief is likely, similar to that experienced for a stillbirth, but with the additional factor that the abortion was chosen.^{167,168,169} In a major Scottish study, a majority of men and women experienced negative emotional responses and somatic complaints, including problems in their sexual relationships.¹⁷⁰ Among women, 40% experienced coping problems lasting more than 12 months. But the effects can last much longer. For example, Dutch researchers found that grief and post-traumatic symptoms remained between 2 and 7 years after the event.¹⁷¹ In the same study, greater psychological distress was experienced by women when the foetus was at a more advanced gestational age. Other researchers found that, contrary to expectations, traumatic stress at 4 years was not significantly different

¹⁵⁴ Coleman PK, Reardon DC & Cogle JR (2005) Substance use among pregnant women in the context of previous reproductive loss and desire for current pregnancy. *British Journal of Health Psychology* 10:255-268

¹⁵⁵ Dingle K, Alata R, Clavarino A, Najman JM & Williams GM (2008) Pregnancy loss and psychiatric disorders in young women: an Australian birth cohort study. *British Journal of Psychiatry* 193:455-460

¹⁵⁶ Pedersen W (2007) Childbirth, abortion and subsequent substance use in young women: a population-based longitudinal study. *Addiction* 102(12):1971-8

¹⁵⁷ Coleman PK, Coyle CT, Shuping M & Rue VM (2009) *Op. Cit.*

¹⁵⁸ Fergusson DM *et al.* (2009) *Op. Cit.*

¹⁵⁹ Coleman PK, Coyle CT, Shuping M & Rue VM (2009) *Op. Cit.*

¹⁶⁰ Mota NP *et al.* (2010) *Op. Cit.*

¹⁶¹ Reardon DC & Coleman PK (2005) Relative treatment rates for sleep disorders and sleep disturbances following abortion and childbirth: a prospective record-based study, *Sleep* 28(12):1293-1294

¹⁶² Coleman PK, Rue VM & Coyle CT (2009) Induced abortion and intimate relationship quality in the Chicago Health and Social Life Survey, *Public Health* 123:331-338

¹⁶³ Verit FF & Verit A (2008) A Turkish study of prevalence and risk factors for low sexual function in women, *Journal of Sexual Medicine* 5(12):2973-2974

¹⁶⁴ Bianchi-Demicheli F, Perrin E, Lüdicke F, Bianchi PG, Chatton D & Campana A (2002) Termination of pregnancy and women's sexuality. *Gynecologic and Obstetric Investigation* 53(1):48-53

¹⁶⁵ Coleman PK *et al.* (2010) *Op. Cit.*

¹⁶⁶ Coleman PK *et al.* (2002) *Op. Cit.*

¹⁶⁷ Elder SH & Laurence KM (1991) The impact of supportive intervention after second trimester termination of pregnancy for fetal abnormality. *Prenatal Diagnosis* 11:47-54

¹⁶⁸ Zeanah C, Dailey JV, Rosenblatt MJ & Saller DN Jr. (1993) Do women grieve after terminating pregnancies because of fetal anomalies? A controlled investigation. *Obstetrics & Gynecology* 82:270-5

¹⁶⁹ Salvesen KA, Oyen L, Schmidt N, Malt UF & Eik-Nes SH (1997) Comparison of long-term psychological responses of women after pregnancy termination due to fetal anomalies and after perinatal loss. *Ultrasound in Obstetrics & Gynecology* Feb, 9(2):80-5

¹⁷⁰ White-Van Mourik MCA *et al.* (1992) *Op. Cit.*

¹⁷¹ Korenromp MJ *et al.* (2005) *Op. Cit.*

to that experienced at 14 days.¹⁷² Recent research by the same group¹⁷³ has shown, using functional MRI, that the neural activation pathways underlying grief in women who terminated their pregnancies because of foetal abnormality are the same as those involved in physical pain.

The assumption that early detection and termination for foetal anomaly leads to better psychological outcomes for women is being questioned.¹⁷⁴

Recent prospective research identified adverse experiences following abortion for foetal anomaly. At four months, 8.8% experienced grief, 45.8% showed symptoms of post traumatic stress, 12.2% exhibited psychological malfunctioning, and 27.9% had depression.¹⁷⁵ These symptoms declined over the following year.

Summary

Abortion is associated with a wide range of adverse physical and psychological sequelae. While research proving causality is limited, and much research in this field is yet to be conducted, there is already a large body of evidence describing the adverse outcomes. Women are entitled to be made aware of all the associated risks. Furthermore, because women who present for abortion are often ambivalent, and ambivalence is a known risk factor for later adverse effects, it is imperative that health professionals make it possible for women to consider all the relevant factors.

The nature of abortion, with its complex medical, social, legal and ethical dimensions demands extra care on the part of health professionals to ensure that the needs of their patients are properly met.

¹⁷² Kersting A, Dorsch M, Kreulich C, Reutemann M, Ohrmann P, Baez E & Arolt V (2005) Trauma and grief 2-7 years after termination of pregnancy because of fetal anomalies – a pilot study. *Journal of Psychosomatic Obstetrics & Gynecology* 26(1):9-15

¹⁷³ Kersting A, Ohrmann P, Pedersen A, Kroker K, Samberg D, Bauer J, Kugel H, Koelebeck K, Steinhard J, Heindel W, Arolt V & Suslow T (2009) Neural Activation Underlying Acute Grief in Women After the Loss of an Unborn Child. *American Journal of Psychiatry* 166:1402-1410

¹⁷⁴ Davies V *et al.* (2005) *Op. Cit.*

¹⁷⁵ Korenromp MJ, Godelieve CML, van den Bout J, Mulder EJH & Visser GHA (2009) Adjustment to termination of pregnancy for fetal anomaly: a longitudinal study in women at 4, 8, and 16 months, *American Journal of Obstetrics and Gynecology* 160:e1-7