

Improving outcomes  
for fertility patients:  
**multiple births**  
**2015**

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## Introduction

A multiple birth is the greatest health risk of fertility treatment. It carries the following risks to the health of the mother and her babies:

- At least half of twins are born before 37 weeks and with low birth weights, which puts them at high risk of serious health problems.
- Over 90% of triplets are born before 37 weeks and many are born so early that they are at high risk of long-lasting serious health problems and death.
- A small percentage of twins have severe health problems that will affect their entire lives. An example is cerebral palsy, which affects between four and six times as many twins compared to singleton babies.<sup>1</sup>

Historically, the percentage of multiple births as a result of in vitro fertilisation (IVF) treatment has been much higher than natural conceptions, largely because of the trend to transfer two or more embryos to the womb during treatment. In 2008, for example, almost a quarter of births resulting from IVF treatment were of two or more babies.

Learning from other countries that the multiple birth rate can be reduced without harming success rates<sup>2</sup>, we have worked closely with clinics, professional bodies, patient groups and NHS funding bodies to reduce the number of multiple births in the UK.

From 2009, following a public consultation, we started setting a maximum multiple birth rate target for clinics to meet. This target started at 24% and was reduced in steps over a period of years to work towards an end goal of reducing the rate to no more than 10% of all live births.

All clinics are expected to devise their own 'multiple births minimisation strategy' setting out how they will not exceed the maximum multiple birth rate that we set each year. The main way to reduce the multiple birth rate is to transfer one embryo at a time, even when more are available. This is known as elective single embryo transfer (eSET) and is recommended by professional bodies for use in patients most likely to conceive through IVF.

In spring 2010, winter 2012 and autumn 2014 we ran a series of workshops about multiple births for clinic staff. These workshops acted as a forum for clinic staff to exchange their experiences and discuss best practice. The discussions helped clinics in developing and reviewing their strategies and audits.

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<sup>1</sup> For further information see [www.oneatime.org.uk/36.htm](http://www.oneatime.org.uk/36.htm).

<sup>2</sup> For examples and references see [www.oneatime.org.uk/212.htm](http://www.oneatime.org.uk/212.htm).

We use data submitted by clinics to continuously monitor their progress against the target. By using the same methodology for all clinics, we ensure consistency and fairness. Our monitoring tools can prompt us to contact clinics in between inspections if we feel they need to take action and allow us to provide them with up-to-date information to help them refine their minimisation strategies as appropriate.

In 2011 we analysed our multiple births data and published a [report](#) to show the progress the fertility sector was making. This report showed that eSET was increasing, particularly in the younger age groups, and correspondingly the multiple pregnancy rate was falling. The pregnancy rate itself appeared to be being maintained. At the time of that report, we said we would look at the figures again after a few years, and that is what we aim to do here.

This report shows the progress the fertility sector has made since 2011. The key findings are:

- There has been a marked shift from patients having a double embryo transfer (DET) to having an eSET. This is most noticeable in younger patients on their first treatment cycle.
- As a result, the multiple pregnancy and multiple birth rates have dropped dramatically. Overall, the multiple births rate has dropped from one in four IVF live births in 2008 to only one in six in 2013.
- Despite this dramatic change, pregnancy and birth rates have been maintained and have recently started to rise.
- Women aged under 38 on their first fresh treatment cycle have a higher pregnancy rate after eSET than after DET.

This remarkable achievement is the result of a collaborative approach, with patient groups, professional societies and the HFEA working together to change practice. Clinics have developed their own strategies, in line with our policy, to identify the correct patients who benefit most from eSET. Crucially, they have reassured patients that eSET is the best – and most successful – treatment for them.

## Methodology

The Human Fertilisation and Embryology Authority (HFEA) is the independent regulator of fertility treatment in the UK. We license, monitor and inspect fertility clinics and publish independent, reliable information on the subject.

By law, clinics are required to submit information to us about the fertility treatment they carry out and this information is stored on our secure database, known as the Register.

One of the things this data allows us to do is publish reports about trends and figures in fertility treatment which we know to be of interest to the fertility sector and the wider public. This report, which focusses on multiple births, is one of such reports and a follow-up to [a report](#) we published on the same subject in 2011.

This report presents key information about patients, treatment cycles and outcomes from 2008 to the end of June 2014, the latest point verified data is available for.

### Background to this report

When comparing how things have changed from one year to another, we usually present the data for a calendar year each time. In this report, we have also included a further six months of data, to mid 2013 for births and to mid 2014 for pregnancies, in order to give the most up-to-date picture.

When presenting a continuous period (for instance showing month-by-month changes), we have presented the data to the end of June 2014.

### How we gathered the data

As noted above, clinics are required by law to supply us with data on every treatment cycle started, including information about the eggs collected, embryos created and transferred, subsequent pregnancies and births. They must do so within specified time periods; for instance, a birth must be reported to us within a year of the cycle being started.

### Understanding the data analysis

The targets for clinics are based on multiple birth rates. However, pregnancy rates are available far sooner than birth rates as we do not need to wait so long for the result.

Using multiple pregnancy rates, as we do frequently in this report, can give us a good early indication of the multiple birth rates. Some pregnancies unfortunately result in miscarriage and the loss of one or more babies. We can account for this to create a multiple pregnancy rate target equivalent to the actual multiple birth target.

Our data is presented by the year the treatment cycle started, not the year a consequent pregnancy or birth was reported in. Other data providers, such as the Office for National Statistics (ONS), publish birth rates according to the year the child was born.

There are different ways to account for the outcomes of a treatment. Our live birth data counts all births where one or more babies were born showing some sign of life, including those who go on to die within the first month of life (neonatal deaths). Our multiple birth data counts only births where two or more babies were born alive, including those where one or more of the babies die within the first month of life.

Stillbirths – where a baby is born after 24 weeks gestation showing no signs of life – are not included in either live birth or multiple birth counts. This means that a multiple pregnancy which results in the birth of one live baby and one stillborn baby would not be counted by us as a multiple birth. The ONS, however, classes a multiple birth as a pregnancy resulting in the birth of more than one baby, whether alive or stillborn.

The information that we publish is a snapshot of data provided to us by the clinics licensed by us at a particular time. The figures supplied in this report are taken from our Register data as at 21 May 2015. Clinics are required to regularly audit data and are asked to confirm its accuracy every six months as part of our regular publication of this data.

### Accessing the data

The data in this publication has been presented in a way to make it as easy to understand as possible.

If you would like to access the data used to compile this report, it is available to download as an Excel file from our [website](#).

### Terms and acronyms used in this report

Term/acronym	Meaning
<b>Blastocyst</b>	An embryo which has been grown in the laboratory for five to six days.
<b>Cleavage stage embryo</b>	An embryo which has been grown in the laboratory for two to three days.
<b>Double embryo transfer (DET)</b>	When two embryos are transferred to a woman’s uterus at the same time.
<b>Elective single embryo transfer (eSET)</b>	When a woman opts to reduce the risk of a multiple birth by having one embryo transferred in a treatment cycle despite having more available.
<b>Fresh treatment cycle</b>	Where embryos are created and transferred to a woman in the same IVF treatment cycle, rather than being created and frozen in one cycle for use in a future treatment cycle.
<b>Frozen embryo transfer (FET)</b>	A treatment cycle which involves transferring to the woman an embryo which was created and frozen in a past treatment cycle.
<b>In vitro fertilisation (IVF)</b>	Where a woman’s eggs and a man’s sperm are collected and placed together in a laboratory to achieve fertilisation outside the body.

Term/acronym	Meaning
<b>Intra-cytoplasmic sperm injection (ICSI)</b>	A variation of IVF in which a single sperm is injected directly into a woman's egg.
<b>Live birth</b>	A birth of at least one baby showing some signs of life.
<b>Live birth rate (LBR)</b>	The percentage of treatment cycles started in one year which resulted in a live birth.
<b>Multiple birth</b>	A birth where more than one live baby is born.
<b>Multiple birth rate (MBR)</b>	The percentage of live births that were of more than one live baby.
<b>Multiple pregnancy</b>	A pregnancy (confirmed by ultrasound) which is of more than one fetus.
<b>Multiple pregnancy rate</b>	The percentage of all pregnancies (confirmed by ultrasound) that are of more than one fetus.
<b>Non-elective single embryo transfer (non eSET)</b>	When only one embryo is available for transfer.
<b>Treatment cycle</b>	Fertility treatment, such as IVF, normally happens over a period of about two weeks or more. It is therefore called a cycle of treatment rather than a one-off procedure. The start of a cycle is usually taken to be when the woman starts taking drugs to stimulate egg production.

A full glossary of terms, acronyms and abbreviations is available on our [website](#).

### Report type

This is an ad hoc research report.

### Revisions policy

No revisions are planned to this publication unless errors are found which will be corrected.

### Contact us regarding this publication

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 Statistical: [statistics@hfea.gov.uk](mailto:statistics@hfea.gov.uk)

# Embryo transfers

## How has elective single embryo transfer (eSET) changed?

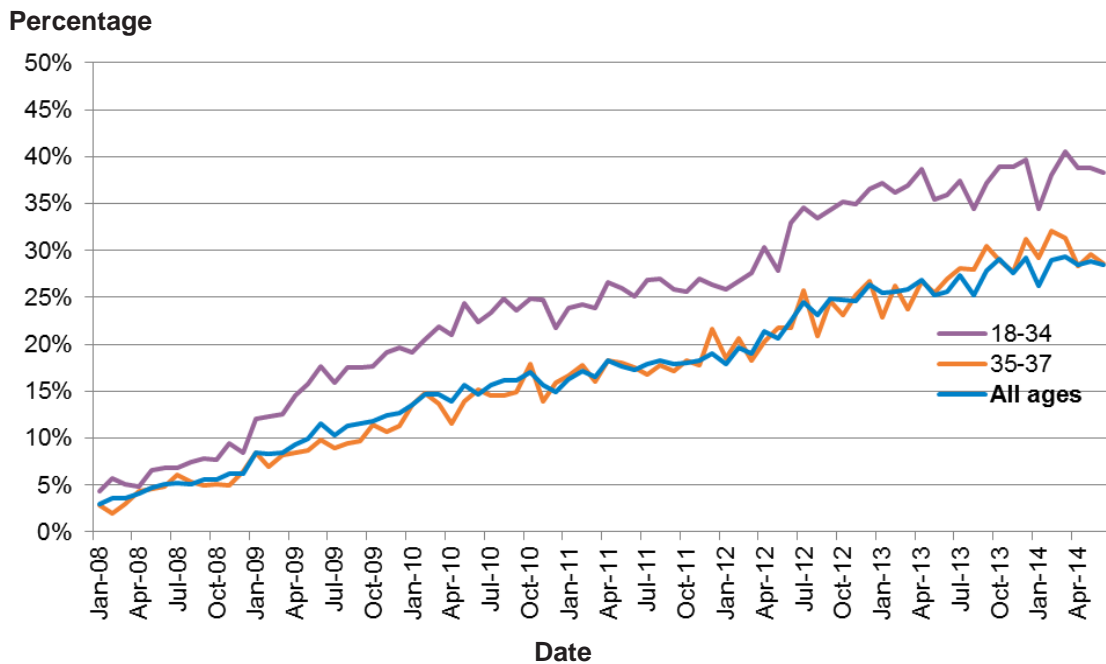
Fertility professionals agree that the best way to prevent multiple pregnancies is to transfer just one embryo at a time in women who are most likely to conceive from IVF.

Where more than one embryo is available, this is known as elective single embryo transfer (eSET). eSET is not suitable for all patients; the decision should be a clinical one based on individual circumstances.

Since 2008 we have seen the proportion of eSETs increase substantially. In 2008, fewer than 5% of embryo transfers were eSET, but in the year ending June 2014, this had increased to 29% (see figure 1).

The figure for women aged 18–34 (shown by the purple line in figure 1) – the group most at risk of a multiple pregnancy – has increased even more dramatically, from 7% to 38% for the same time period.

**Figure 1: Proportion of fresh and frozen embryo transfers which are eSET: 2008 to June 2014**





## How does the proportion of eSETs compare to other transfers?

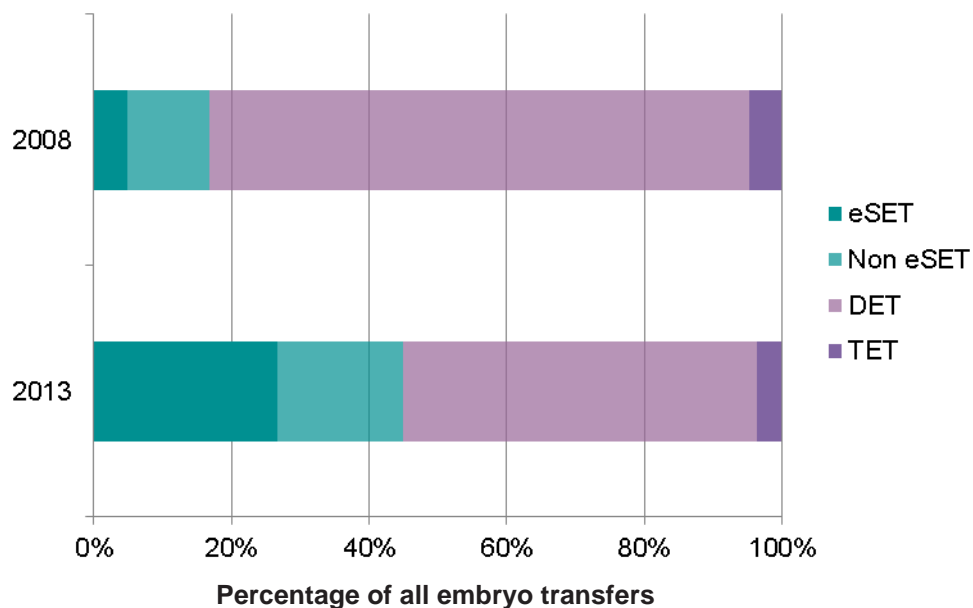
In our [previous multiple births data report](#) in 2011, we observed that the proportion of eSETs was low when compared to double embryo transfers (DETs), even in younger women. The data published then, for the first six months of 2010, showed 15% of transfers were eSET.

Figure 2 shows how much has changed between 2008 and 2013. It is clear how eSET has grown, and correspondingly how the proportion of DET has shrunk. It appears that women who might previously have had a DET and been at an increased risk of a multiple pregnancy now have eSET.

Overall, DETs have gone from making up over three quarters of all transfers to only about a half. The number of triple embryo transfers (TETs) has also declined, in line with our updated Code of Practice which advises against TETs because of the very high risks for mothers and their babies.

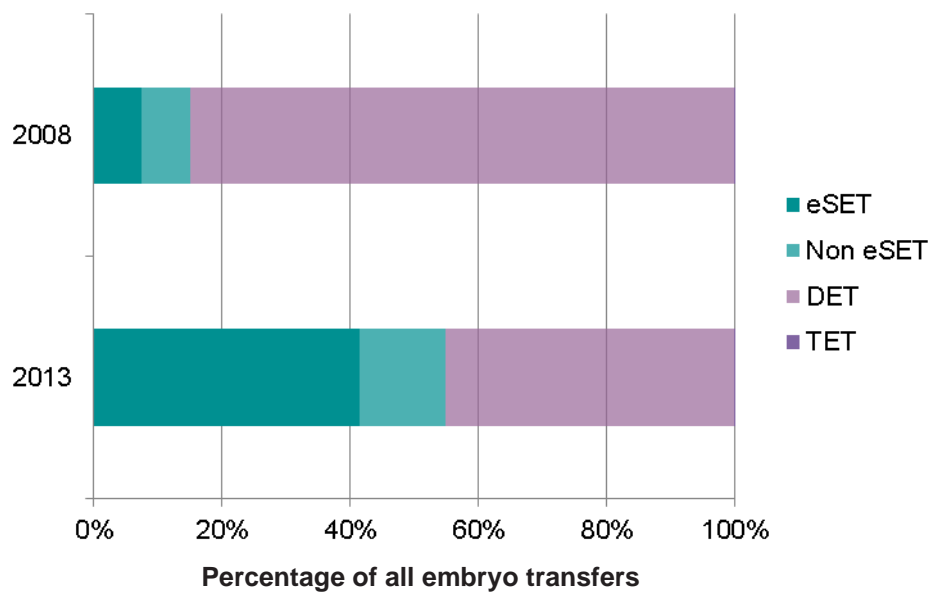
It's important to note that some women may only have one embryo available for transfer; this is known as non-elective single embryo transfer, or 'non eSET'.

**Figure 2: Number of fresh and frozen embryos transferred to women of all ages: 2008 and 2013 comparison**



In women aged 18–34 having a fresh treatment cycle, this shift from DET to eSET is even more pronounced from 2008 to 2013 (see figure 3). Now, around the same proportion of transfers are eSET as DET; just over 40%.

**Figure 3: Number of fresh embryos transferred to women aged 18–34: 2008 and 2013 comparison**

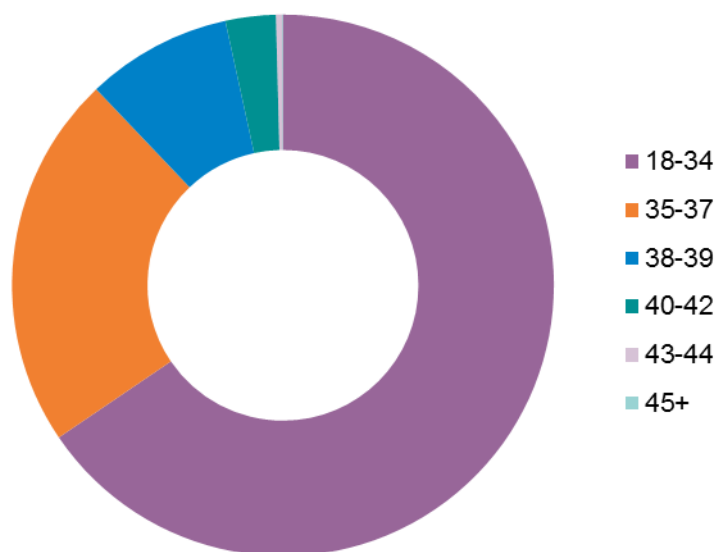


**How old were the women receiving eSET?**

Around two thirds (64%) of women receiving eSET were aged 18–34 and a further 23% were aged between 35 and 37. This means that nearly 90% of women receiving eSET were aged 37 and under, despite making up only two thirds of women treated with IVF in total.

Interestingly, while the number of eSETs have increased substantially (see figure 1), from just under 2,000 in 2008 to nearly 14,000 in 2013, the age distribution has remained steady; in 2008 82% were aged 37 and under.

**Figure 4: Age breakdown of eSETs in 2013**



## Which treatment cycle were women on and how many embryos were created?

Current professional guidelines (Cutting et al, 2008) suggest women aged under 38 on their first or second treatment cycle are most suitable for eSET. The updated fertility treatment guidelines from the National Institute for Health and Care Excellence (NICE), published in 2013, also provided evidence for women aged 39 or under with several top quality embryos to receive eSET.

Women on their first treatment cycle were more likely to receive eSET than those on subsequent cycles. Two thirds (67%) of eSET cycles were the patient's first fresh treatment cycle, 17% their second and 16% their third or more.

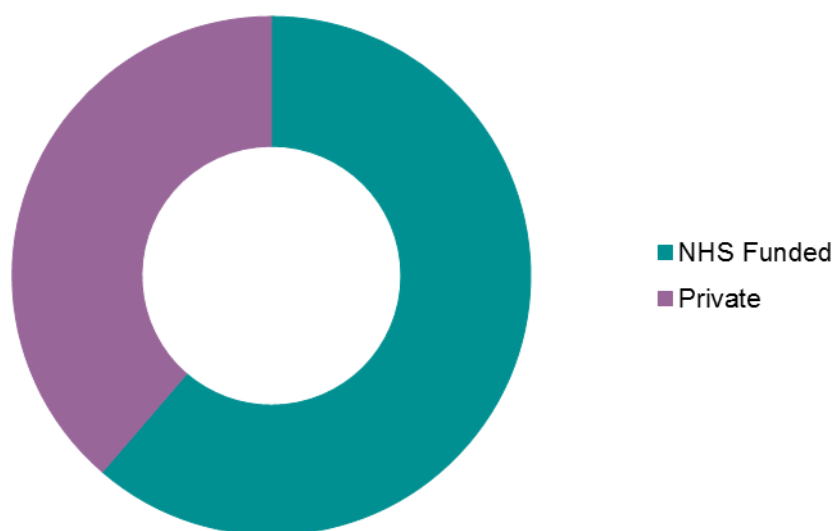
Women receiving eSET in 2013 had an average (median) of seven embryos created; this compares with eight in 2008.

## How many eSET cycles were funded by the NHS?

In 2013, just under two thirds (61%) of fresh eSET cycles were funded by the NHS. This has grown slightly since 2009 (57%) and continued to grow in the first half of 2014 (63%). This compares with around 40% of cycles funded for IVF treatment in general.

As noted above, the women receiving eSET tended to be young and on their first treatment cycle – those most likely to be eligible for NHS-funded treatment.

**Figure 5: Funding source of fresh eSET transfers performed in 2013**



## Treatment using frozen embryos

Each year, around two thirds (2008: 63%; 2013: 64%) of the women having eSET freeze embryos for their own future treatment, with the majority of these (around 80%) freezing two or more.

The proportion freezing two or more embryos after a fresh eSET has declined between 2008 and 2013, from 86% to 78%, possibly reflecting the decline in the average number created.

Between 30 and 45% of eSET cycles – whether successful or not – are followed up by at least one frozen cycle (within the timeframe for which we have verified data).

An interesting possible side effect of the growth in eSET is a contribution to the increase in the number of frozen embryo transfers (FETs), up 10% year-on-year between 2012 and 2013. We have noted in other reports that much of the recent growth in the sector has been as a result of treatment using frozen embryos.

### Key points

- We have seen a continued increase in eSET, with a corresponding decline in DET.
- Most of the women receiving eSET are aged 37 and under and on their first or second treatment cycle; the patient profile has remained steady despite the increase in numbers. This is in line with what is recommended in professional guidelines and by NICE.
- The majority of women receiving eSET were able to freeze embryos for future use.

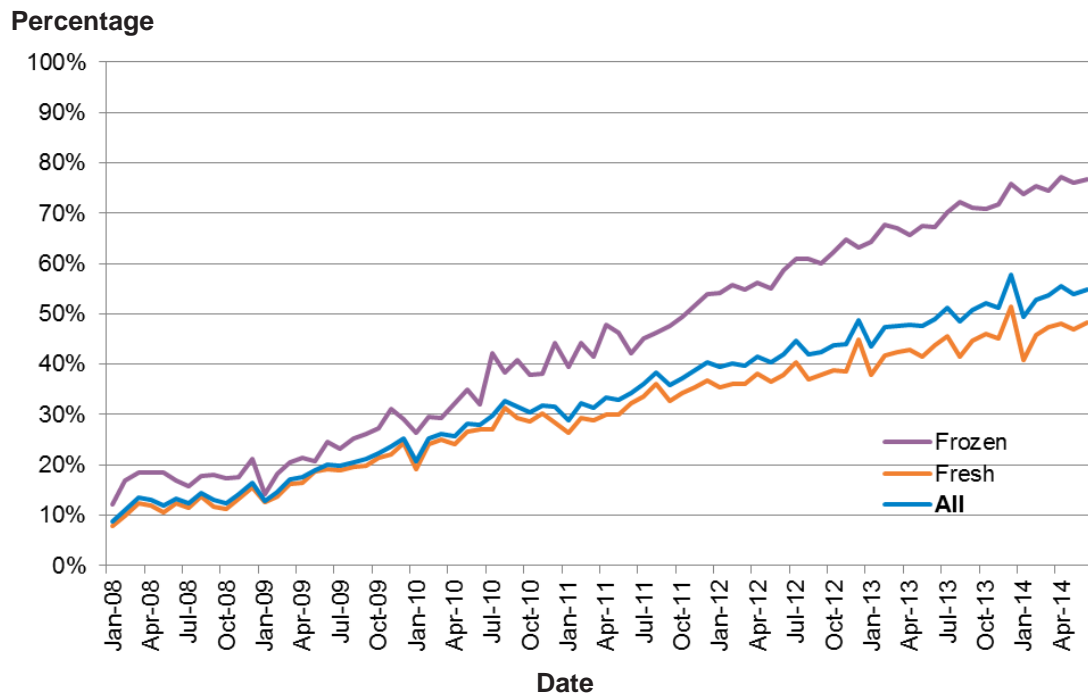
## How has the proportion of blastocyst transfers changed?

A blastocyst is an embryo grown in the laboratory for five or six days before being transferred to the womb. Previously, most embryos were transferred after two to three days in culture, when they are known as cleavage stage embryos.

We have noted in previous publications that the proportion of transfers performed when the embryo is at the blastocyst stage has increased substantially over the last five years. Figure 6 shows this trend and how it has continued to mid 2014. The blue line shows that overall, blastocyst transfers have increased from 13% in 2008 to 54% by mid 2014.

For frozen blastocyst transfers (shown by the purple line), the growth has been even more dramatic, particularly since around 2011. This could possibly be because more blastocysts are being frozen, or because some embryos frozen at the cleavage stage are then thawed and further cultured to the blastocyst stage.

**Figure 6: Proportion of embryo transfers performed at the blastocyst stage: 2008–2014**

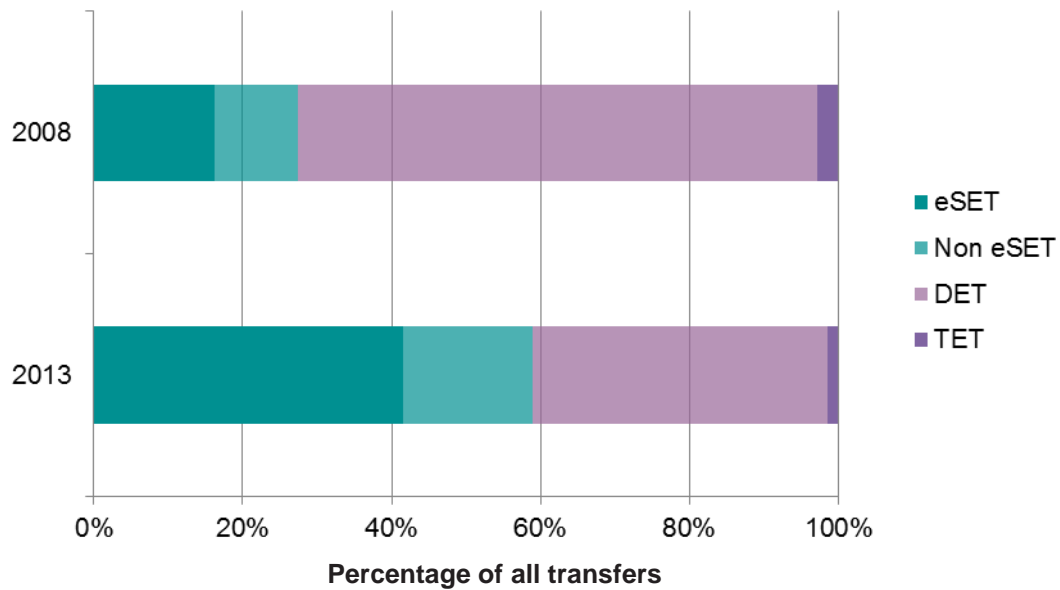


In previous publications we have also highlighted the high multiple pregnancy rate that is associated with double blastocyst transfers (see also table 4 in the results section). In 2012, we saw that 44% of pregnancies in women aged 18–34 following a fresh double blastocyst transfer were multiple pregnancies. Our Code of Practice requires clinicians to consider this when implementing their multiple births strategy.

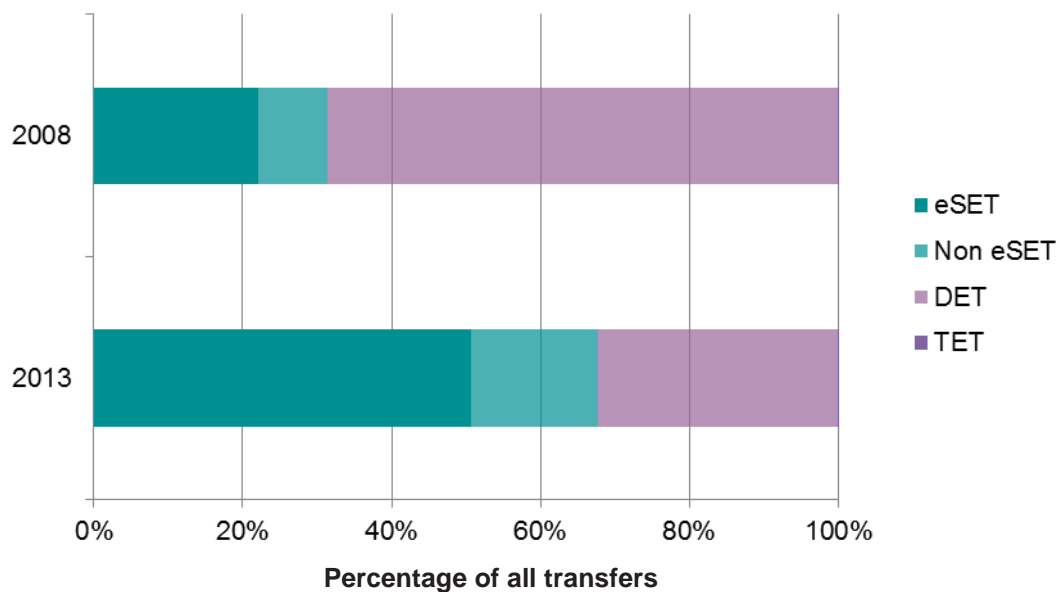
When blastocyst transfer was a newer treatment option, we saw that clinicians tended to transfer two at a time. But as the good success rates – but high multiple rates – became more widely known, eSET has become more common, again with DETs decreasing (see figure 7).

Indeed, in women aged 18–34 having treatment with fresh blastocysts, eSET is now the most common type of transfer (see figure 8).

**Figure 7: Number of fresh and frozen blastocysts transferred to women of all ages: 2008 and 2013 comparison**



**Figure 8: Number of fresh blastocysts transferred to women aged 18–34: 2008 and 2013 comparison**

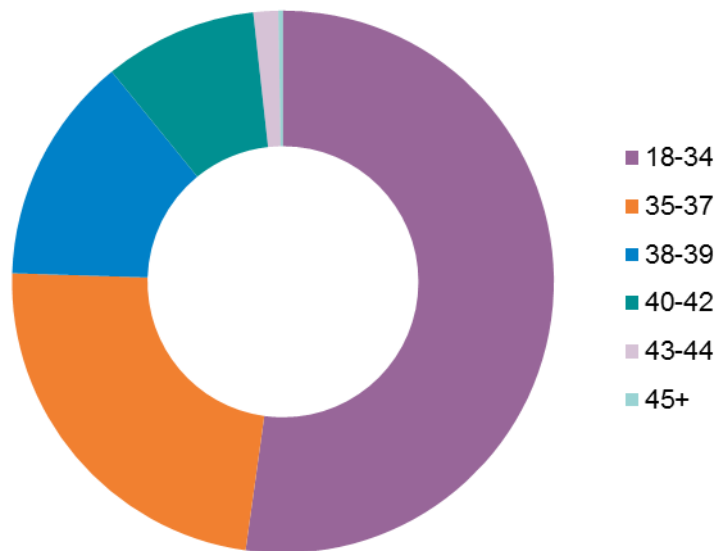


### How old were the women receiving blastocyst transfers?

Just over half (52%) of women receiving blastocyst transfers were aged 18–34 and a further 23% were aged between 35 and 37 (see figure 9).

As with eSET, again there has been a striking increase in the number of transfers over the past five years, but the age profile has remained similar. For instance, there has been over a 10-fold increase in number of blastocyst eSET transfers between 2008 and 2013; in both cases about 85% of women were aged 37 or under.

Figure 9: Age breakdown of blastocyst transfers in 2013



#### Key points

- Blastocyst transfers have continued to increase rapidly, particularly in frozen treatment cycles.
- The eSET rate for blastocyst transfers has increased, most notably for younger women. This is very important because of the high multiple pregnancy rate associated with DETs.

# Results

## Pregnancy rates

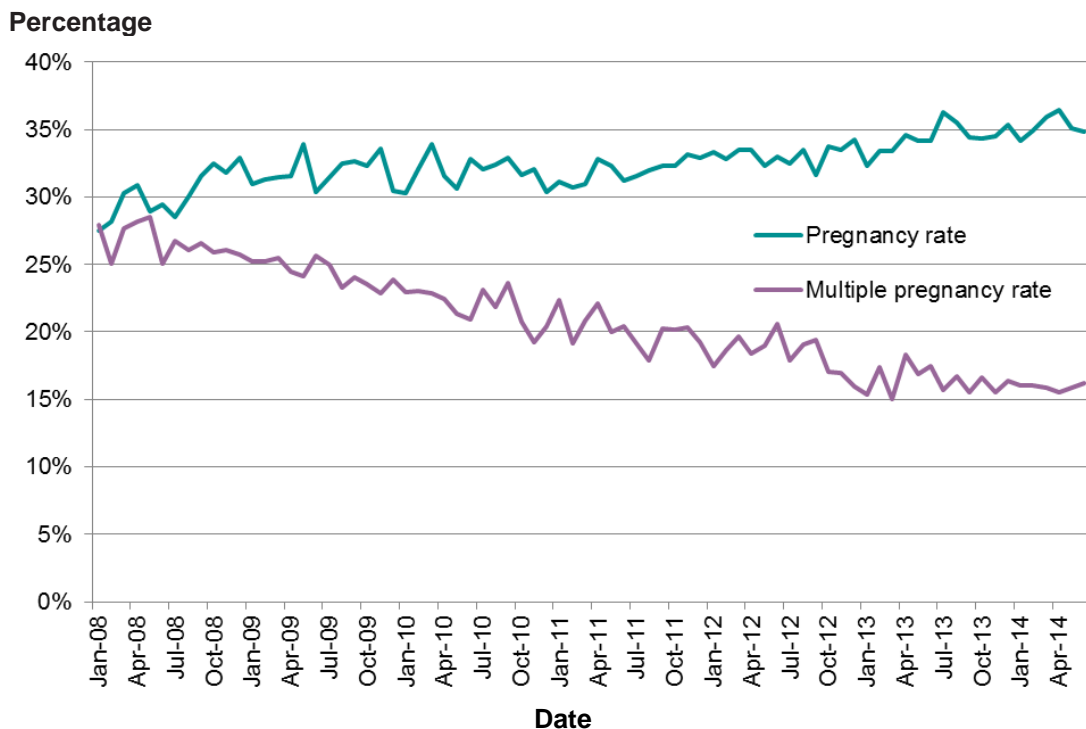
Some patients have been concerned that an increased use of eSET will mean lower success rates. This is something we have monitored closely since the introduction of our multiple births minimisation policy.

Figure 10, however, shows that the pregnancy rate has been maintained since 2008 and has in fact started to increase over the most recent years, despite the wider use of eSET.

Over the same period we have seen a dramatic and continued drop in the multiple pregnancy rate (see table 3 for full multiple pregnancy results).

In 2008 the overall pregnancy rate was 30% compared with 34% in 2013 (and higher still, 35%, for the first half of 2014). Looking just at fresh transfers, the rate is slightly higher and shows the same increase over the years, from 32% to 36% between 2008 and 2013.

**Figure 10: Pregnancy rate (per embryo transfer) and multiple pregnancy rate (per pregnancy), fresh and frozen transfers: 2008 to mid 2014**



Looking at the most recent data, we can see that there has been a very slight year-on-year increase in pregnancy rates for most age groups (table 1) between 2012 and 2014.



**Table 1: Pregnancy rate (per embryo transfer), fresh and frozen treatment: 2013 and mid year 2014 comparison**

Age	2013	Mid 2014
18–34 years	40%	41%
35–37 years	36%	37%
38–39 years	30%	30%
40–42 years	23%	22%
43–44 years	13%	12%
45+ years	8%	6%
<b>All ages</b>	<b>34%</b>	<b>35%</b>

Patients are often concerned that choosing eSET might harm their chance of getting pregnant, but our most recent data suggests that this isn't the case.

While there is a difference in pregnancy rates between cleavage and blastocyst stage transfers, when comparing eSET with DET for either stage there is little difference (table 2).

For the youngest age groups (those making up around 90% of those having eSET), the pregnancy rate for blastocysts is the same whether one or two embryos are transferred.

We have seen that women who have eSET are likely to have further frozen embryos which could be transferred in subsequent treatment cycles (without the need for another egg collection). We look at the pregnancy rates for these cumulative cycles in the section below.

**Table 2: Pregnancy rate per embryo transfer (fresh and frozen treatment cycles) according to the number and stage of the embryos: 2013**

Number of embryos: Stage of embryos:	eSET		DET	
	Cleavage	Blastocyst	Cleavage	Blastocyst
18–34 years	32%	47%	36%	47%
35–37 years	28%	44%	33%	45%
38–39 years	21%	37%	27%	41%
40–42 years			19%	35%
43–44 years	12%	27%	10%	23%

Number of embryos: Stage of embryos:	eSET		DET	
	Cleavage	Blastocyst	Cleavage	Blastocyst
<b>45+ years</b>			6%	
<b>All ages</b>	29%	45%	30%	43%

### Multiple pregnancy rates

As shown in figure 10, the multiple pregnancy rate has dropped dramatically since the introduction of our multiple births minimisation policy, in particular for the youngest age group, 18–34. In 2008 the overall multiple pregnancy rate was 27% and had fallen to 16% in the first half of 2014 (table 3).

In the most recent years, while the pregnancy rate has been climbing (table 1), the multiple pregnancy rate has continued to fall (table 3) and, looking at the most recent data clinics are submitting, is continuing to fall.

The sustained and continuing decline on a national level is a sign of clinics auditing and reviewing their strategies and making use of the data available to them.

**Table 3: Multiple pregnancy rate (fresh and frozen treatment cycles): 2013 and mid 2014 comparison**

Age	2013	Mid 2014
<b>18–34 years</b>	16%	16%
<b>35–37 years</b>	18%	16%
<b>38–39 years</b>	17%	16%
<b>40–42 years</b>	15%	15%
<b>43–44 years</b>	10%	9%
<b>45+ years</b>		
<b>All ages</b>	<b>16.4%</b>	<b>15.9%</b>

We saw in table 2 that there is very little difference in the pregnancy rates for eSET and DET. However, there is a striking difference between the multiple pregnancy rates (table 4).

For a woman aged under 35 with blastocysts available, the likelihood of getting pregnant is the same with either eSET or DET (47%, table 2), but the likelihood of a multiple pregnancy is around 20 times higher with a double blastocyst transfer (table 4).

**Table 4: Multiple pregnancy rate (fresh and frozen treatment cycles), stage and number of embryos transferred: 2013**

Number of embryos: Stage of embryos:	eSET		DET	
	Cleavage	Blastocyst	Cleavage	Blastocyst
18–34 years	>1.5%	>2%	27%	40%
35–37 years		>2.5%	25%	35%
38–39 years			18%	28%
40–42 years	>2.5%			24%
43–44 years		>2%	13%	16%
45+ years				
All ages	>2%	>2%	24%	35%

### Multiple pregnancies from blastocyst transfers

It was noted earlier on that double blastocyst transfers tend to have a high multiple pregnancy rate, more so than double cleavage stage embryo transfers.

In 2008, in the 18–34 age group, over half of pregnancies (52%) resulting from a fresh blastocyst DET were a multiple pregnancy. This compares with 30% resulting from fresh cleavage stage DETs in this age group. Overall (fresh and frozen transfers, all ages), the figures were also very high.

Since then, the multiple pregnancy rate after a blastocyst DET has declined markedly, both overall and in this youngest group, which together with the eSET figures in figure 8, suggest that the better prognosis patients – those most likely to have a multiple pregnancy – are now having blastocyst eSET rather than blastocyst DET.

Multiple pregnancies following SET are quite rare and mainly happen when the embryo splits in two, resulting in identical (monozygotic) twins. In spontaneous conceptions the figure is around 1.56% of births (Office for National Statistics, 2014) and in IVF pregnancies it tends to be very slightly higher (Vitthala, et al, 2009).

We know that anecdotally there are some spontaneous conceptions alongside treatment, which can result in a multiple (though not identical) pregnancy. Our data can't pick this up; only that more babies were born than embryos transferred.

Others (Vitthala, et al, 2009) have noted the increase in identical twins from blastocyst transfers and we have also observed this. However, the small number of identical twins each year has made it difficult to draw robust statistical conclusions about this effect.

Between 2008 and mid 2014 there were 547 multiple pregnancies from single embryo transfers (eSET and non eSET). Three quarters of these were from

blastocyst transfers, which made up only half of these single embryo transfers. There does seem to be an association between blastocyst transfers and identical twins. This is something we plan to continue monitoring.

### Cumulative pregnancy rates

A cumulative pregnancy rate can tell us the proportion of women who get pregnant after more than one treatment cycle, for instance after one fresh and one frozen cycle.

This is an important figure to present, as women having eSET are likely to have embryos frozen for future treatment. Here, we compare the pregnancy rates for women transferring two embryos in sequence (one fresh eSET, one SET of a thawed frozen embryo) or together (one DET).

In women aged under 38 on their first fresh cycle of IVF, eSET has a pregnancy rate which is slightly higher than that for similar women receiving a DET, and the multiple pregnancy rate is dramatically lower (see table 5).

When a thawed frozen embryo is subsequently transferred, the total, cumulative pregnancy rate is 49%, but the multiple rate remains at 2%, similar to that for spontaneous conceptions. In comparison, our figures show that of the women who became pregnant after a DET, a third were carrying two or more babies.

**Table 5: Pregnancy and multiple pregnancy rates for women aged 37 or under on their first fresh treatment cycle: initial cycle in 2013**

Number of embryos:	eSET		DET	
	Pregnancy rate	Multiple rate	Pregnancy rate	Multiple rate
<b>Fresh transfer</b>	45%	2%	40%	32%
<b>Cumulative rate after subsequent single FET</b>	49%	2%		

These figures are from cycles started in 2013, taking into account subsequent frozen transfers up to mid 2014. It is likely that these patients may have further FETs.

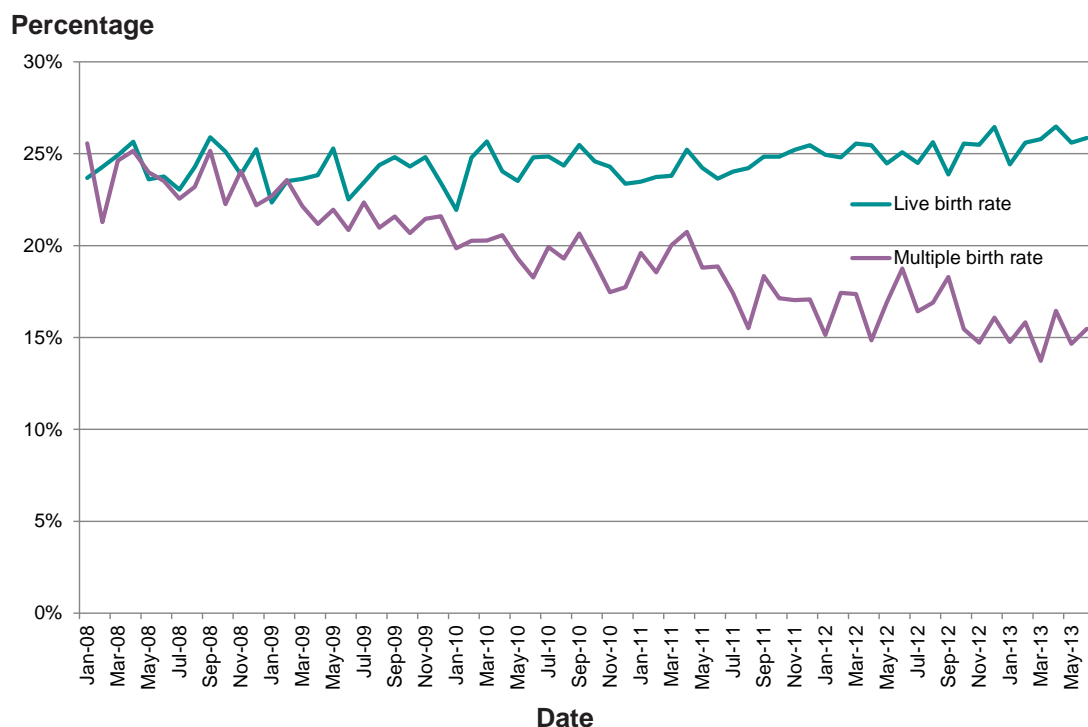
### Birth rates

Live birth rates closely follow the pregnancy rates. However, we have to wait longer for the results, so here we present the results to the middle of 2013, the most recent period data is available for.

As with pregnancies, live birth rates were sustained after 2008 (see figure 11), despite fears they may drop with the increase in eSETs.

Having seen the increase in pregnancies from around 2012, we can expect this upward trend to continue into 2014 when the data is available.

**Figure 11: Live birth rate (per cycle started) and multiple birth rate (per live birth), fresh and frozen: 2008 to mid 2013**



**Table 6: Live birth rates per cycle started (fresh and frozen treatment cycles): 2012 and mid 2013 comparison**

Age	2012	Mid 2013
18–34 years	31%	31%
35–37 years	26%	29%
38–39 years	20%	21%
40–42 years	14%	14%
43–44 years	6%	7%
45+ years	2%	3%
<b>All ages</b>	<b>25%</b>	<b>26%</b>

### Multiple birth rates

Again, the multiple birth rate follows the multiple pregnancy rate closely, so has declined markedly, particularly for the younger age groups, who we have seen are those most likely to opt for eSET.

For the half year to June 2013, the multiple birth rate was 15.2% and we have seen from our unverified data that it is continuing to decline.

**Table 7: Multiple birth rates per live birth (fresh and frozen treatment cycles): 2012 and mid 2013 comparison**

Age	2012	Mid 2013
18–34 years	17%	15%
35–37 years	18%	16%
38–39 years	16%	16%
40–42 years	11%	12%
43–44 years	7%	10%
45+ years		
<b>All ages</b>	<b>17%</b>	<b>15%</b>

### Key points

- Pregnancy and live birth rates have increased recently, while the multiple rates have continued to decline.
- Blastocyst transfers appear to be associated with an increased risk of monozygotic (identical) twins compared to cleavage stage transfers.
- Women aged 37 and under on their first treatment cycle, receiving a fresh eSET followed by a subsequent FET have a higher pregnancy rate than similar women receiving a DET. The multiple pregnancy rate, however, remains much lower.

## Conclusions

This report shows how a collaborative approach to tackling public health issues can have dramatic effects. Clinics, patient groups and the HFEA have worked together effectively to bring about swift cultural change in IVF, making it safer for patients and their babies.

eSETs have increased, especially in younger women – those for whom it is generally most appropriate – and multiple pregnancies have decreased markedly, again especially in younger women. Crucially, clinics have achieved this whilst maintaining the overall pregnancy and live birth rates. In recent years, these rates have even begun to increase.

Women having a blastocyst transfer are just as likely to conceive whether they have one or two embryos transferred. However, the likelihood of a multiple pregnancy is greatly reduced by choosing eSET.

Younger women on their first treatment cycle who have an eSET followed by a subsequent SET have a higher pregnancy rate than those that have a fresh DET, but a multiple pregnancy rate which remains similar to that of spontaneous conceptions.

Clinics have been continuously monitored and been able to view their own 'real-time' data using our monitoring tools. This has enabled us to take action swiftly where necessary. While not every clinic has met the targets we have set each year, the majority have. We will continue to push for progress and keep up the momentum achieved so far.

As well as being a success in terms of the health of IVF patients and their babies, this policy has also been a success in terms of using data collected in the day-to-day business of treating patients to improve outcomes. Patients are able to make informed decisions about their treatment and clinics are able to monitor their own progress.

As ever, we are grateful to the professional bodies, clinicians and scientists, patient groups and, most important of all, the patients themselves, who have all worked to make this policy a success.

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