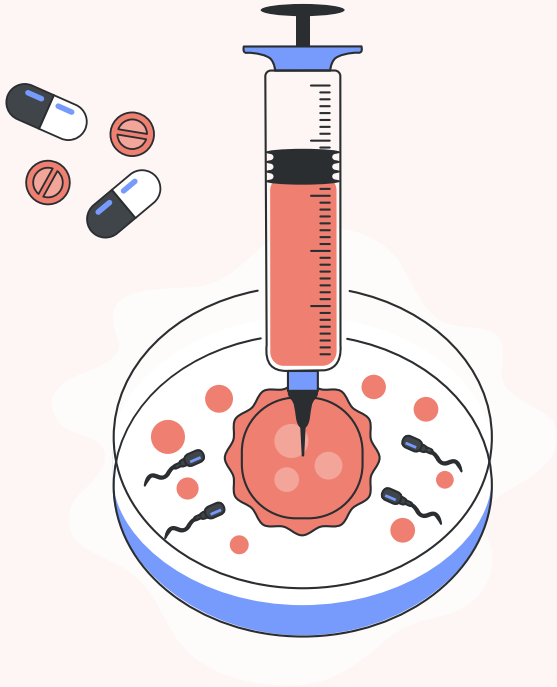
iVF Riga Holding

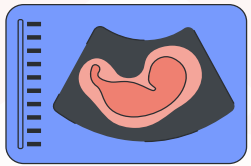
Mīti par auglības saglabāšanu

Dr. med. Violeta Fodina,
Reproduktoloģe, ginekoloģe –
dzemdību speciāliste,
iVF Riga Holding CEO

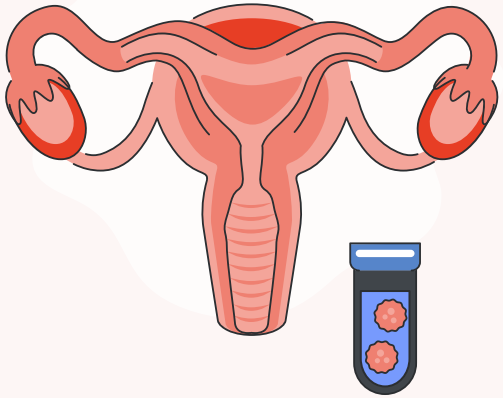


Interešu paziņošana

1. iVF Riga klīnikas valdes priekšsēdētāja
2. Reproduktoloģijas speciāliste, ginekoloģe, dzemdību speciāliste
3. Lektore reģionālā līmenī (Merck Serono, Ferring Pharmaceuticals, GryNumber Health, Gedeon Richter utt.)
4. Medicīnas doktora grāds Latvijas Universitātē
5. LCRB (Latvijas Cilvēku reprodukcijas biedrības) valdes locekle



Lekcijas jautājumi



01 Vai visām sievietēm nepieciešams saglabāt olšūnas?

02 Vai olnīcu stimulācija nepasliktinās pamatdiagnozes prognozi?

03 Vai pietiks laika to izdarīt līdz staru vai ķīmijterapijas sākumam?

04 Olšūnu izdzīvošanas procents un vai tālāk var cerēt uz grūtniecību?

01 Vai visām sievietēm nepieciešams saglabāt olšūnas?

Vai visām sievietēm nepieciešams saglabāt olšūnas?

1. Sievietes 5 gadu izdzīvošanas procents.
2. Gonodatoksisko preparātu izmantošana un to efekts.
3. Sievietes vecums un olšūnu rezerves.

Statistika par onkoloģiskajām saslimšanām Latvijā

- Ļaundabīgie audzēji ir otrs biežākais nāves cēlonis Latvijas iedzīvotāju vidū.
- Ik gadu ~10-11 tūkstošiem Latvijas iedzīvotāju tiek diagnosticēts ļaundabīgais audzējs, ~5,5 tūkstoši ik gadu nomirst ļaundabīgo audzēju dēļ.

Pirmreizēji reģistrēto ļaundabīgo audzēju gadījumu skaits sadalījumā pa reģioniem

Gads	Skaits	Uz 100 000 iedzīvotāju
2013	11764	584,5
2014	11640	583,8
2015	11459	579,5
2016	11501	586,9
2017	12168	626,5
2018	11419	592,5
2019	11204	585,4
2020	10325	543,3
2021	9596	509,2
2022	10739	571,4
2023	10741	572,1

SPKC, Veselības statistikas datubāze; https://statistika.spkc.gov.lv/pxweb/lv/Health/Health__Saslimstiba_Slimibu_Izplatiba__Onkologija/ONKO021.px/

Vai visām sievietēm nepieciešams saglabāt olšūnas?

- Diagnozi “krūts vēzis” Latvijā ik gadu uzzina aptuveni 1200 sieviešu, liecina SPKC dati.
- Gan pasaulē, gan Latvijā saslimstība palielinās un vairāk slimo gados jaunas sievietes.
- Krūts vēzis ir nāvējošākais vēža tips sievietēm ES. 2023. gadā no krūts vēža priekšlaicīgi mirušas 411 sievietes.

Pirmreizējo onkoloģisko pacientu uzskaite 2023. g., sadalījums pa ļaundabīgā audzēja lokalizācijām un reģioniem, absolūtajos skaitļos

Audzēja veids	Kopā	Rīgas statistiskais reģions	Pierīgas statistiskais reģions	Vidzemes statistiskais reģions	Kurzemes statistiskais reģions	Zemgales statistiskais reģions	Latgales statistiskais reģions	Rīga
Kopā	10741	4546	1998	1562	1937	1165	1507	3371
C00-C10 (Lūpas, mutes dobums, rīkles mutes daļa)	224	101	39	43	36	20	24	79
C15 (Barības vads)	113	34	17	11	26	8	33	23
C16 (Kuņģis)	403	170	70	54	66	47	66	129
C18 (Resnā zarna)	660	308	135	87	120	58	86	227
C18-C21 (Kolorektālā daļa)	1106	488	214	149	200	106	162	359
C19-C20 (Sigmveida un taisnās zarnas savienojums, taisnā zarna)	413	165	74	60	73	42	73	120
C21 (Tūplis (anus) un tūpļa kanāls (canalis analis))	33	15	5	2	7	6	3	12
C22 (Aknas un intrahepatiskie žultsvadi)	157	77	30	23	19	25	12	58
C25 (Aizkuņģa dziedzeris)	345	137	67	47	63	43	55	105
C32 (Balsene)	97	40	29	25	7	14	11	26
C34 (Bronhi un plaušas)	730	255	122	116	156	97	106	190
C40-C41 (Kauli, locītavu skrimšļi)	23	14	4	4	3	1	1	11
C43 (Ādas melanoma)	263	134	55	41	34	25	29	103
C44 (Citi ļaundabīgi ādas audzēji)	1386	618	224	171	233	130	232	488
C50 (Krūts)	**1154**	**565**	**221**	**148**	**196**	**110**	**134**	**412**
C51-C52 (Sieviešu ārējie dzimumorgāni, maksts)	62	28	10	11	11	4	8	23
C53 (Dzemdes kakls)	178	64	25	22	37	23	31	50
C54-C55 (Dzemdes ķermenis)	353	142	62	54	58	44	53	109
C56 (Olnīcas)	243	103	47	41	40	31	28	77
C61 (Prostata)	1249	469	248	219	253	143	160	328
C62 (Sēklinieks)	29	17	4	4	1	3	3	14
C64 (Niere)	428	147	89	65	91	49	76	108
C67 (Urīnpūslis)	500	201	100	92	97	53	55	147
C71 (Galvas smadzenes)	151	56	27	27	28	16	23	38
C73 (Vairogdziedzeris)	244	122	45	23	30	27	42	87
C76-C80 (Neprecīzi apzīmēti, sekundāri un nelokalizēti)	377	170	62	44	90	29	44	127
C81 (Hodžkina limfoma)	40	26	8	1	5	2	5	19
C81-C96 (Limfoīdie, asinsrades un radniecīgie audi)	512	231	114	69	85	59	64	159
C82-C85 (Ne Hodžkina limfoma)	206	99	49	25	22	26	32	64
C90 (Multiplā mieloma un ļaundabīgi plazmas šūnu audzēji)	100	41	23	18	20	7	14	27
C91 (Limfoleikoze)	81	34	19	13	17	13	3	23
C92 (Mieloleikoze)	43	15	6	8	9	2	9	14

SPKC, Veselības statistikas datubāze; https://statistika.spkc.gov.lv/pxweb/lv/Health/Health__Saslimstiba_Slimibu_Izplatiba__Onkologija/ONKO030.px/chart/chartViewColumn/

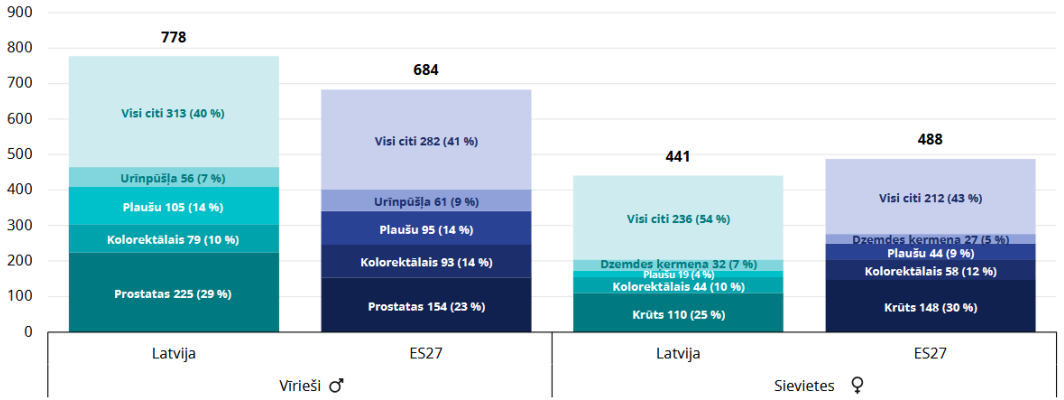
Vai visām sievietēm nepieciešams saglabāt olšūnas?

Vēža izraisīta **mirstība** Latvijā 2021. gadā bija **trešā augstākā** ES+2 valstīs. Neraugoties uz zemo saslimstību ar vēzi **sieviešu vidū** Latvijā, **mirstība** (206 uz 100 000 sievietēm) **bija par 12 % augstāka nekā ES vidējais** rādītājs (184 uz 100 000 sievietēm).

No 2011. līdz 2021. gadam vēža izraisīta **mirstība** Latvijā **samazinājās** tikai par 8 % vīriešu vidū un **par 5 % sieviešu vidū**.

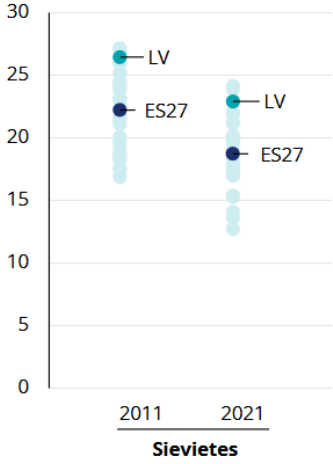
1. attēls. Latvijā ir ļoti liela atšķirība starp dzimumiem saslimstībā ar vēzi

Vecuma standartizēta saslimstība uz 100 000 iedzīvotāju, aplēses, 2022. g.



Piezīmes: 2022. gada skaitļi ir aplēses, kuru pamatā ir iepriekšējo gadu saslimstības tendences, un tie var atšķirties no pēdējos gados novērotajiem rādītājiem. Ietver visas vēža lokalizācijas, izņemot ādas vēzi, kas nav melanoma. Corpus uteri (dzemdes ķermeņa vēzis) vēzis neietver dzemdes kakla vēzi.
Avots: Eiropas vēža informācijas sistēma (ECIS). No https://ecis.jrc.ec.europa.eu, skatīts 10.03.2024. © Eiropas Savienība, 2024.
Saslimstības procentuālais sadalījums tika pārrēķināts, pamatojoties uz vecuma standartizētu saslimstību, un tādējādi tas atšķiras no ECIS tīmekļa vietnē parādītā absolūto skaitļu procentuālā sadalījuma.

Vecuma standartizēta novēršamā mirstība no krūts vēža uz 100 000 sieviešu

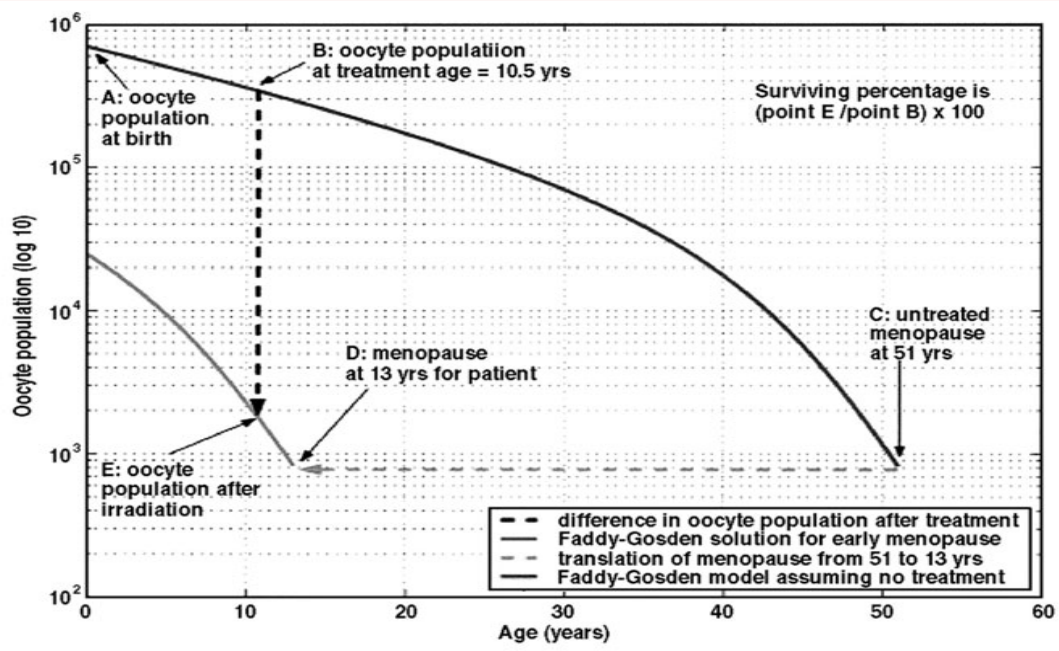


OECD European Cancer Inequalities Registry Valstu vēža profili 2025, Veselības statistikas datubāze; https://www.oecd.org/content/dam/oecd/lv/publications/reports/2025/02/eu-country-cancer-profile-latvia-2025_21c08462/f674523f-lv.pdf

Vai visām sievietēm nepieciešams saglabāt olšūnas?

Staru terapijas un ķīmijterapijas ietekme uz reproduktīvo funkciju

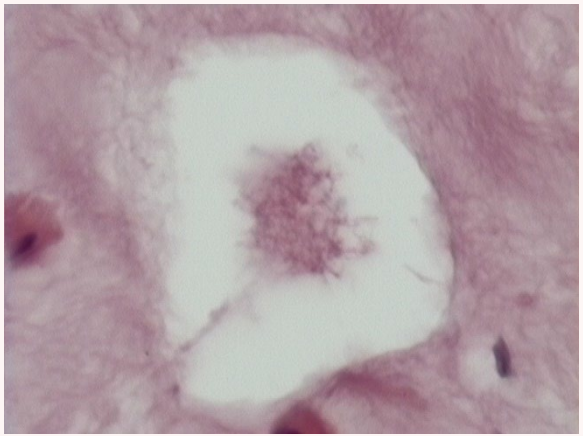
1. >25g.v. pēc ārstēšanās (staru un/ vai ķīmijterapija) spontāna grūtniecība <5%.
2. Staru terapija:
   - 4-6Gy – neatgriezeniskas izmaiņas olnīcās
   - līdz 4Gy – iet bojā 50% primoridiālo folikulu.



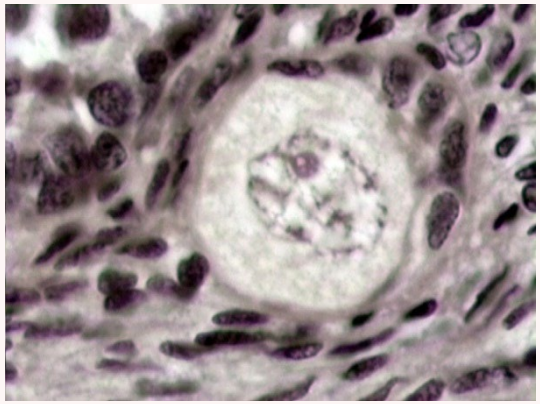
No. 346-Advanced Reproductive Age and Fertility Liu, Kimberly E.Case, Allison et al., Journal of Obstetrics and Gynaecology Canada , Volume 39, Issue 8, 685 - 695

Vai visām sievietēm nepieciešams saglabāt olšūnas?

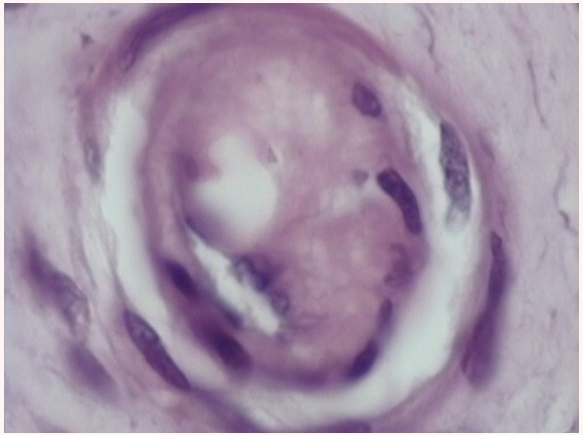
Staru terapijas un ķīmijterapijas ietekme uz reproduktīvo funkciju



Bojāts folikuls pēc 20 Gy



Primordiālais folikuls. Norma



Bojāts folikuls pēc 5 ķīmijterapijas kursiem

Vai visām sievietēm nepieciešams saglabāt olšūnas?

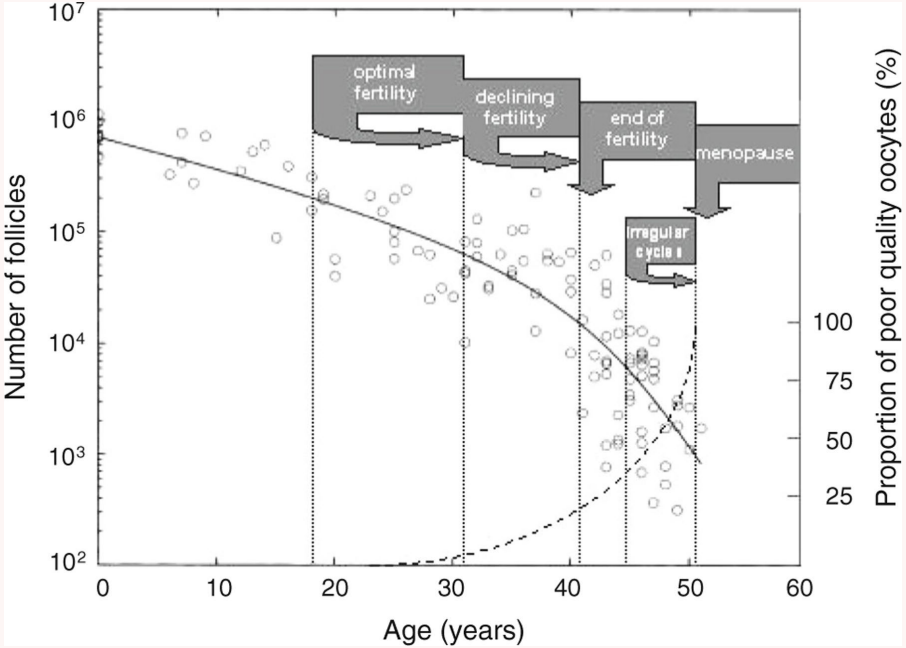
Ķīmijterapija ietekme uz ovariālo rezervi

Preparāts	Klase
Noteikti asociējas ar ovariālas rezerves izsīkumu	
Nitrogen mustard	Mechlorethamine (alkylating agent)
L-phenylalanine mustard	Mechlorethamine (alkylating agent)
Chlorambucil	Chloroethylamine (alkylating agent)
Cydophoaphamide Melphalan	Chloroethylamine (alkylating agent)
Melphalan	Mechlorethamine (alkylating agent)
Busulfan	Alkylalkane sulfonate (alkylating agent)
Procarbazine	Substituted hydrazine
Dacarbazine	Alkylating agent
Doxorubicin	Anthracydine
Iespējāms asociējas ar ovariālas rezerves izsīkumu	
Vinblastine	Vinca alkaloid
Cytosine arabinoside (Ara-C)	Antimetabolite
Cis-platinum	Heavy metal
Carmustine	Nitrosourea (alkylating agent)
Lomustine	Nitrosourea (alkylating agent)
VP-16	Podophyllotoxin
Imatinib	Tyrosine kinase inhibitor
Zema ovariālas rezerves izsīkuma varbutība	
Methotrexate	Antimetabolite
Fluorouracil (5-FU)	Antimetabolite
6-mercaptopurine	Antimetabolite
Vincristine	Vinca alkaloid
Mitomycin	Antibiotic (alkylating agent)

Welt CK, Shapiro CL. Ovarian failure due to anticancer drugs and radiation. In: UpToDate, Martin, KA (ed), UpToDate, waltham, MA 2013. Copyright @2013 UpToDate, Inc. For more information visit www.uptodate.com)

Vai nepieciešams saglabāt olšūnas?

1. Olšūnu rezervju samazināšanās dzīves gaitā
2. Olšūnu kvalitātes samazināšanās

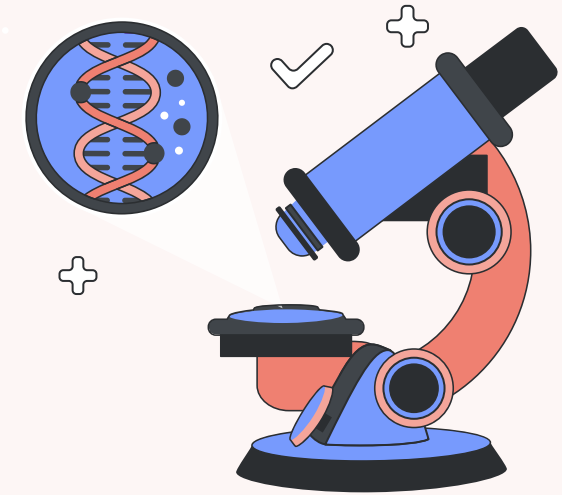


Igarashi, H., Takahashi, T. and Nagase, S. (2015), Oocyte aging underlies female reproductive aging: biological mechanisms and therapeutic strategies. Reprod Med Biol, 14: 159-169. https://doi.org/10.1007/s12522-015-0209-5

Vai nepieciešams saglabāt olšūnas?

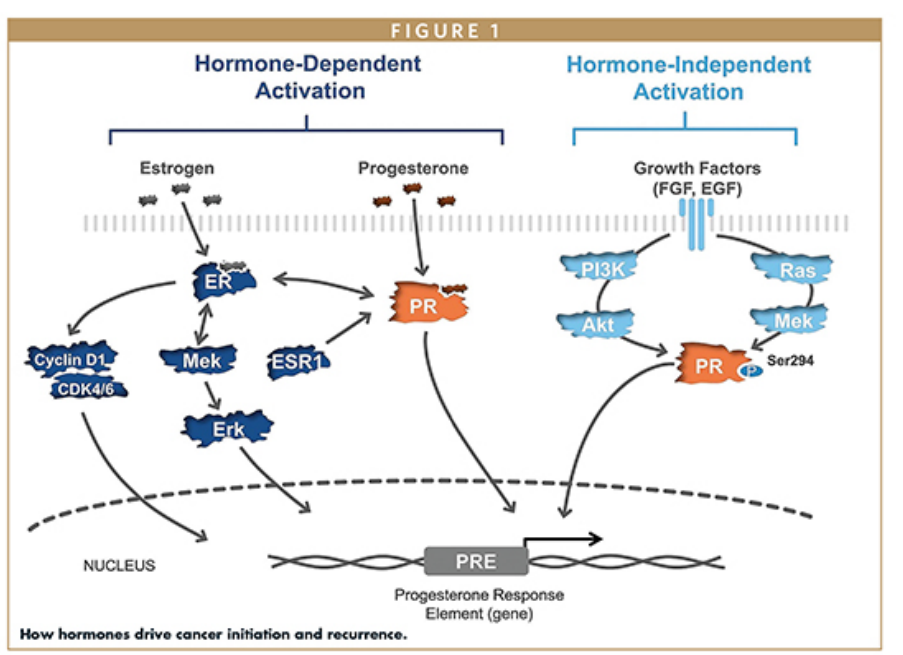
1. ESHRE rekomendācijas - **GnRH antagonistu protokols; Estrogēnpozitīvas slimības gadījumā** jālieto **antiestrogēnu terapiju;** Var apsvērt **dubultstimulācijas izmantošanu;**
2. ASRM rekomendācijas - olnīcu stimulācija **jāuzsāk pēc iespējas ātrāk;** Izmantot **GnRH-antagonistu protokolu;** Krūts vēža gadījumā papildus gonadotropiniem- **aromatāzes inhibitori/ tamoksifēns**

02 Vai olnīcu stimulācija nepasliktinās pamatdiagnozes prognozi?



Vai nepasliktina pamatdiagnozes prognozi?

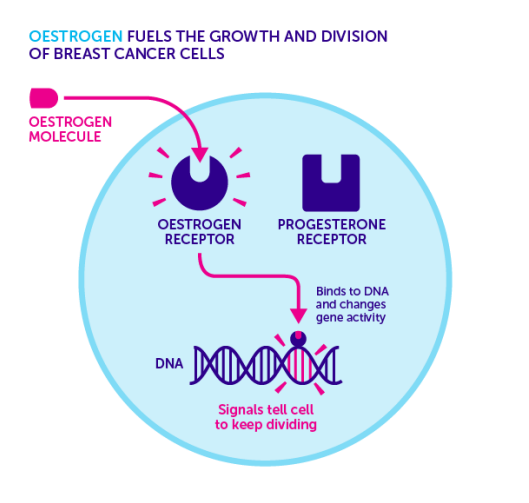
1. Hormonaktarīgie – krūts vēzis, dzemdes un olnīcu vēzis
2. Hormonāli neatkarīgie
3. Asins vēzis



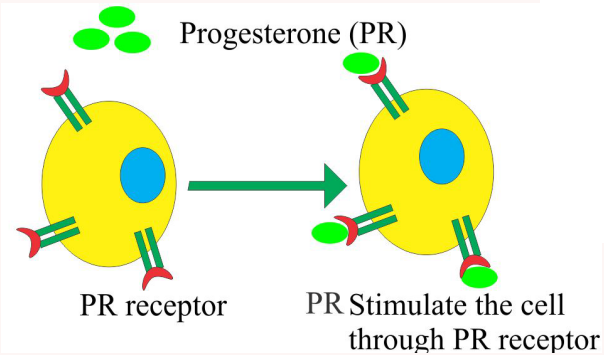
THERAPEUTIC FOCUS - Addressing the Unmet Need for Improved Treatments of Female Cancers, 2023, https://drug-dev.com/therapeutic-focus-addressing-the-unmet-need-for-improved-treatments-of-female-cancers/

Vai nepasliktina pamatdiagnozes prognozi?

1. Estrogēnu receptorpozitīvi audzēji – krūts, olnīcu vēzis.
2. Progesterona receptorpozitīvi audzēji – endometrija vēzis.
3. Estrogēnu un progesterona receptorpozitīvi audzēji – krūts, olnīcu vēzis.



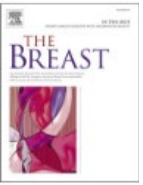
https://news.cancerresearchuk.org/2015/07/08/solving-a-breast-cancer-mystery-why-do-double-positive-women-do-better/



https://labpedia.net/progesterone-receptor-pr-for-breast-cancer/

Vai nepasliktina pamatdiagnozes prognozi?

1. Olnīcu stimulācija estrogēna receptorpozitīvu audzēju pacientēm neizraisa komplikācijas.
2. Tamoksifēna un letrazola izmantošana obligāta stimulācijas laikā.



Use of tamoxifene-controlled ovarian hyperstimulation for fertility preservation before breast cancer treatment: A prospective cohort study with a 5-year follow-up

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Frontiers in Oncology

Efficacy and Safety of Controlled Ovarian Stimulation With or Without Letrozole Co-administration for Fertility Preservation: A Systematic Review and Meta-Analysis

Benedetta Bonardi[1,2†], Claudia Massarotti[3†], Marco Bruzzone[4], Oranite Goldrat[5], Giorgia Mangili[3], Paola Anserini[3], Stefano Spinaci[6], Luca Arecco[7,8], Lucia Del Mastro[7,9], Marcello Ceppi[4], Isabelle Demeestere[1,5‡] and Matteo Lambertini[7,8‡]*

ESMO OPEN SCIENCE FOR OPTIMAL CANCER CARE

Is controlled ovarian stimulation safe in patients with hormone receptor-positive breast cancer receiving neoadjuvant chemotherapy?

C. Benvenuti[1,2], L. Laot[3], T. Grinda[1], M. Lambertini[4,5], B. Pistilli[1*] & M. Grynberg[6]

Volume 9 ■ Issue 2 ■ 2024

Table 2. Studies evaluating the impact of OS in early breast cancer patients according to hormone receptor status and/or neoadjuvant treatment administration

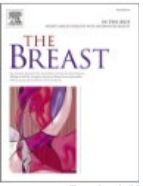
Study	Period	Population	Sample size	OS	No OS	HR+ eBC (%)	Follow-up (years)	Outcomes in the overall populations	Outcomes in HR+ and/or NAT subgroup
Chien et al., 2017[55]	2010-2017	All patients in the neoadjuvant setting OS cohort: younger, lower stage	82	34	48	37 (45)	6.6	5-year PFS: 79.2% versus 82.4% ($P = 0.784$)	No analysis according to eBC subtype
Letourneau et al., 2020[58]	2007-2017	Neoadjuvant setting: 85 (41%) versus 59 (48%) OS cohort: more aggressive disease (younger, more likely to receive chemotherapy, higher stage and trend to higher grade)	329	207	122	162 (49)	3.5 and 3.8	43-month DFS: 93% versus 94%, hazard ratio 0.7 (95% CI 0.3-1.7)	HR+ eBC: no significant DFS difference in OS and non-OS cohorts [hazard ratio 0.4 (95% CI 0.1-1.6)] OS cohort: no significant DFS difference in NAT versus non-NAT [hazard ratio 1.4 (95% CI 0.2-9.1)]
Moravek et al., 2021[59]	2005-2018	NAT: 39 (25%) versus 29 (17%)	332	157	175	242 (73)	4 and 6.2	RFS: no significant difference ($P = 0.459$) RR for mortality: 0.52 (95% CI 0.1-2.73)	HR+ eBC: no significant RFS difference in OS versus non-OS cohorts ($P = 0.408$) OS cohort: no significant RFS difference in HR+ versus HR− ($P = 0.890$) RR in NAT versus non-NAT: 0.37 (95% CI 0.07-1.89)
Rodriguez-Wallberg et al., 2018[60]	1999-2013	NAT: 23 (15.5%) versus 87 (23%)	526	148	378	346 (66)	6.6 versus 5.8	RFS: no significant difference (IRR 0.66, 95% CI 0.37-1.17)	HR+ eBC: EFS in OS versus non-OS: hazard ratio 0.35 (95% CI 0.18-0.66) NAT: RR for recurrence in OS versus non-OS: 0.11 (95% CI 0.02-0.77)
Kim et al., 2016[25]	2002-2014	OS cohort: Pre-surgery: 106 (88%) Post-surgery: 14 (12%) The pre-surgery group more likely to be N+ and HR−	337	120	217	159 (47)	5 and 6.9[a]	RFS: no significant difference [hazard ratio 0.77 (0.28-2.13)]	OS cohort: no significant RFS difference in: HR+ versus HR− [hazard ratio 0.63 (95% CI 0.06-5.31), $P = 0.75$]; pre- versus post-surgery ($P = 0.44$)
Muñoz et al., 2019[61]	2008-2016	NAT: 20 (13.5%) versus 39 (35.1%), $P = 0.001$ Pre-surgery OS: 25 (17%) Post-surgery OS: 123 (83%)	259	148	111	207 (80)	5	mDFS: 63.9 versus 60.6 months (NS) mOS: 67.2 versus 65.9 months (NS)	mDFS in pre- versus post-surgery OS: 58.4 versus 64.7 months (NS) No difference in mortality rate between pre- and post-surgery OS

DFS, disease-free survival; eBC, early-stage breast cancer; HR, hormone receptor; IRR, incidence rate ratio; NAT, neoadjuvant treatment; NS, not significant; OS, ovarian stimulation; PFS, progression-free survival; RFS, relapse-free survival; RR, relative risk.

[a]Follow-up available only for 70% of the patients.

Vai nepasliktina pamatdiagr rognozi?

1. Olnīcu stimulācija estrogēna receptorpozitīvu audzēju pacientēm neizraisa komplikācijas.
2. Tamoksifēna un letrazola izmantošana obligāta stimulācijas laikā.



Use of tamoxifene-controlled ovarian hyperstimulation for fertility preservation before breast cancer treatment: A prospective cohort study with a 5-year follow-up

A. Dezellus[a,*], S. Mirallie[b], F. Leperlier[b], B. Sauterey[a], P.-E. Bouet[c], A. Dessaint[d], S. Duros[e], A.S. Gremeau[f], M.-A. Mouret-Reynier[g], L.M. Durand[b], L. Venat[i], P. De Blay[j], M. Robert[a], T. Freour[b], M. Campone[a,k], A. Blanc-Lapierre[a], V. Bordes[a,l]

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Frontiers in Oncology

Efficacy and Safety of Controlled Ovarian Stimulation With or Without Letrozole Co-administration for Fertility Preservation: A Systematic Review and Meta-Analysis

Benedetta Bonardi[1,2†], Claudia Massarotti[3†], Marco Bruzzone[4], Oranite Goldrat[5], Giorgia Mangili[3], Paola Anserini[3], Stefano Spinaci[6], Luca Arecco[7,8], Lucia Del Mastro[7,9], Marcello Ceppi[4], Isabelle Demeestere[1,5‡] and Matteo Lambertini[7,8‡]*

Outcomes in the overall populations

5-year PFS: 79.2% versus 82.4% ($P = 0.784$)

43-month DFS: 93% versus 94%, hazard ratio 0.7 (95% CI 0.3-1.7)

RFS: no significant difference ($P = 0.459$) RR for mortality: 0.52 (95% CI 0.1-2.73)

RFS: no significant difference (IRR 0.66, 95% CI 0.37-1.17)

RFS: no significant difference [hazard ratio 0.77 (0.28-2.13)]

mDFS: 63.9 versus 60.6 months (NS)

mOS: 67.2 versus 65.9 months (NS)

stimulation safe in patients with hormone
ast cancer receiving neoadjuvant chemotherapy?

M. Lambertini[4,5], B. Pistilli[1*] & M. Grynberg[6]

Table 2. Studies evaluating the impact of OS in early breast cancer patient … tment administration

Study	Period	Population	Outcomes in the overall populations	Outcomes in HR+ and/or NAT subgroup
Chien et al., 2017[55]	2010-2017	All patients in the neoadjuvant setting OS cohort: younger, lower stage	5-year PFS: 79.2% versus 82.4% ($P = 0.784$)	No analysis according to eBC subtype
Letourneau et al., 2020[58]	2007-2017	Neoadjuvant setting: 85 (41%) versus 59 (48%) OS cohort: more aggressive disease (younger, more likely to receive chemotherapy, higher stage and trend to higher grade)	43-month DFS: 93% versus 94%, hazard ratio 0.7 (95% CI 0.3-1.7)	HR+ eBC: no significant DFS difference in OS and non-OS cohorts [hazard ratio 0.4 (95% CI 0.1-1.6)] OS cohort: no significant DFS difference in NAT versus non-NAT [hazard ratio 1.4 (95% CI 0.2-9.1)]
Moravek et al., 2021[59]	2005-2018	NAT: 39 (25%) versus 29 (17%)	RFS: no significant difference ($P = 0.459$) RR for mortality: 0.52 (95% CI 0.1-2.73)	HR+ eBC: no significant RFS difference in OS versus non-OS cohorts ($P = 0.408$) OS cohort: no significant RFS difference in HR+ versus HR− ($P = 0.890$) RR in NAT versus non-NAT: 0.37 (95% CI 0.07-1.89)
Rodriguez-Wallberg et al., 2018[60]	1999-2013	NAT: 23 (15.5%) versus 87 (23%)	RFS: no significant difference (IRR 0.66, 95% CI 0.37-1.17)	HR+ eBC: EFS in OS versus non-OS: hazard ratio 0.35 (95% CI 0.18-0.66) NAT: RR for recurrence in OS versus non-OS: 0.11 (95% CI 0.02-0.77)
Kim et al., 2016[25]	2002-2014	OS cohort: Pre-surgery: 106 (88%) Post-surgery: 14 (12%) The pre-surgery group more likely to be N+ and HR−	RFS: no significant difference [hazard ratio 0.77 (0.28-2.13)]	OS cohort: no significant RFS difference in: HR+ versus HR− [hazard ratio 0.63 (95% CI 0.06-5.31), $P = 0.75$]; pre- versus post-surgery ($P = 0.44$)
Muñoz et al., 2019[61]	2008-2016	NAT: 20 (13.5%) versus 39 (35.1%), $P = 0.001$ Pre-surgery OS: 25 (17%) Post-surgery OS: 123 (83%)	mDFS: 63.9 versus 60.6 months (NS) mOS: 67.2 versus 65.9 months (NS)	mDFS in pre- versus post-surgery OS: 58.4 versus 64.7 months (NS) No difference in mortality rate between pre- and post-surgery OS

DFS, disease-free survival; eBC, early-stage breast cancer; HR, hormone receptor; IRR, incidence rate ratio; NAT, neoadjuvant treatment; NS, not significant; OS, ovarian stimulation; PFS, progression-free survival; RFS, relapse-free survival; RR, relative risk.

[a]Follow-up available only for 70% of the patients.

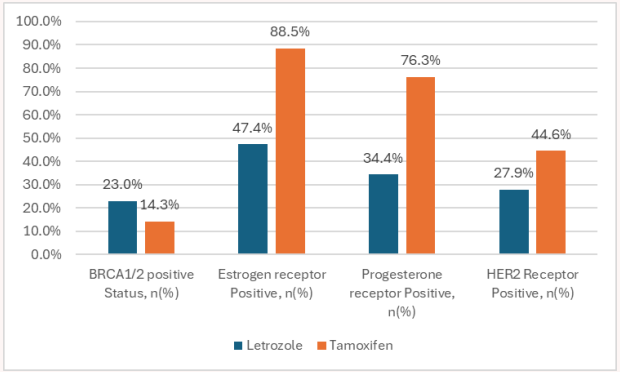
Vai nepasliktina pamatdiagnozes prognozi?

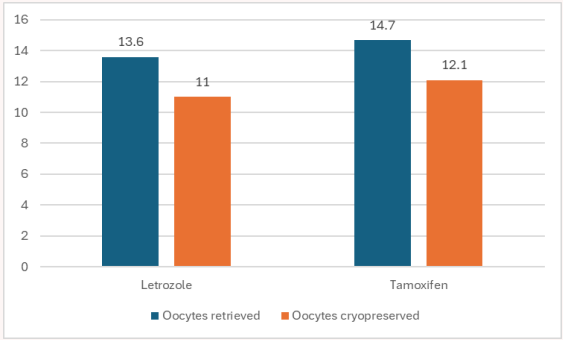
Šajā plašajā retrospektīvajā pētījumā, kurā piedalījās primreizēji diagnosticētas krūts vēža pacientes, kurām veica olšūnu saglabāšanu ar tamoksifēnu vai letrozolu, starp abām ārstēšanas grupām netika novērotas būtiskas atšķirības rezultātos. Letrozola grupā tika sasniegts zemāks maksimālais E2 līmenis un endometrija biezums.

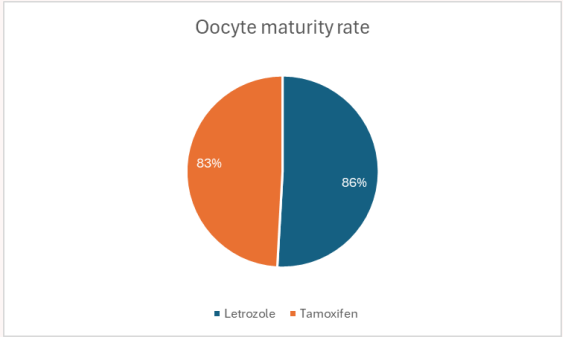
Letrozole or Tamoxifen co-administration during fertility preservation for patients affected by breast cancer

Dror Lifshitz [1 2], Avi Ben-Haroush [2 3], Dror Meirow [1 2 5], Raoul Orvieto [1 2 4], Dana Vaturi Meirman [2], Loren Elbaz [2], Yoel Shufaro [2 3], Avital Wertheimer [2 3]

Received 3 December 2024, Revised 2 February 2025, Accepted 21 February 2025, Available online 25 February 2025.







Vai nepasliktina pamatdiagnozes prognozi?

1. **Uzmanību!**

Progesterona receptorpozitīvu audzēju grūtniecības laikā palielinās riski audzēja recidīvam, tiek ieteikta surgācija.

2. **Cilvēka epidermālā augšanas faktora receptora 2 (HER2) klātbūtne**

HER2 receptora palielināta aktivitāte nevar būt kontrindikācija olšūnu saglabāšanai.

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ORIGINAL ARTICLE

Safety of pregnancy after breast cancer in young women with hormone receptor-positive disease: a systematic review and meta-analysis

L. Arecco[1,2†], E. Blondeaux[3†], M. Bruzzone[3], M. M. Latocca[2], E. Mariamidze[4], S. Begijanashvili[5], E. Sokolovic[6], G. Gentile[7], G. Scavone[8], S. Ottonello[9], A. Boutros[1,9], I. Vaz-Luis[9], C. Saura[10], R. A. Anderson[11], I. Demeestere[12], H. A. Azim, Jr[13], E. de Azambuja[14], F. A. Peccatori[15], L. Del Mastro[1,7], A. H. Partridge[16] & M. Lambertini[1,2*]

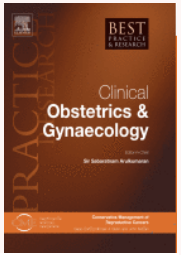
Available online 23 October 2023

Journal of Clinical Oncology®
An American Society of Clinical Oncology Journal

Pregnancy After Breast Cancer: A Systematic Review and Meta-Analysis

Authors: Matteo Lambertini, MD, PhD, Eva Blondeaux, MD, Marco Bruzzone, MSc, Marta Perachino, MD, Richard A. Anderson, MD, Evandro de Azambuja, MD, PhD, Philip D. Poorvu, MD, Hee Jeong Kim, MD, Cynthia Villarreal-Garza, MD, PhD, Barbara Pistilli, MD, Ines Vaz-Luis, MD, PhD, Cristina Saura, MD, PhD, Kathryn J. Ruddy, MD, MPH, Maria Alice Franzoi, MD, Chiara Sertoli, MD, Marcello Ceppi, MSc, Hatem A. Azim Jr, MD, PhD, Frederic Amant, MD, PhD, Isabelle Demeestere, MD, PhD, Lucia Del Mastro, MD, Ann H. Partridge, MD, MPH, Olivia Pagani, MD, and Fedro A. Peccatori, MD, PhD SHOW FEWER | AUTHORS INFO & AFFILIATIONS

Publication: Journal of Clinical Oncology • Volume 39, Number 29 • https://doi.org/10.1200/JCO.21.00535



BEST PRACTICE & RESEARCH

Clinical Obstetrics & Gynaecology

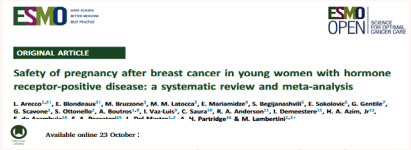
Surrogacy and ethics in women with cancer

Susan V. Carr

Faculty of Medicine, University of Melbourne, Parkville, Australia

https://doi.org/10.1016/j.bpobgyn.2018.11.001
1521-6934/

Vai nepasliktina pamatdiagnozes prognozi?



ESMO OPEN

ORIGINAL ARTICLE

Safety of pregnancy after breast cancer in young women with hormone receptor-positive disease: a systematic review and meta-analysis

L. Arecco[1,2], E. Blondeaux[3], M. Bruzzone[1], M. M. Latocca[1], E. Mariamidze[4], S. Begjanashvili[4], E. Sokolovic[5], G. Gentile[1], G. Scavone[1], S. Ottonello[1], A. Boutros[1,6], I. Vaz-Luis[7], C. Saura[8], R. A. Anderson[9], I. Demeestere[10], H. A. Azim, Jr[11], [12], M. Lambertini[1,2,*]

Available online 23 October

Retrospektīvu kohortas pētījumu sistemātiska metaanalīze parādīja, ka grūtniecība pacientiem ar hormonu receptoru pozitīvu agrīnu krūts vēzi anamnēzē ir droša, bez negatīvas ietekmes uz prognozi.

Table 1. Main characteristics of the studies included in the meta-analysis

Reference	Country	Years	Study design	Mean/median age at diagnosis in pregnancy versus no pregnancy cohort	Patients with pregnancy after HR+ BC, *n*	Patients without pregnancy after BC, *n*	Mean/ median time from diagnosis to pregnancy	Mean/median follow-up time in pregnancy versus no pregnancy cohort	Matching criteria for choosing controls/ controlling factors	Outcomes	Risk of bias[a]
Valentini et al., 2013[33]	Canada, USA, Europe, Asia	1985-2010	Retrospective cohort study	32.5 versus 33.8 years (not only HR+)	21	66	Mean: 2.1 years (not only HR+)	10.2 years (not only HR+)	Age, *BRCA* mutation, country of residency, date of breast cancer diagnosis, date of completion of baseline questionnaire	15 years survival rate	High
Nye et al., 2017[34]	USA	2000-2010	Retrospective cohort study	34.2 versus 36.1 years	32	29	Within 5 years	9.2 versus 6.5 years	Age, stage at diagnosis	DFS	Moderate
Lambertini et al., 2018[23]	Europe	Before 2007	Retrospective cohort study	32.0 versus 35.0 years (not only HR+)	194	492	Median: 1.7 years (not only HR+)	9.6 years	ER status, nodal status, adjuvant treatments, age, year of diagnosis	DFS in HR+ (primary) DFS in HR−, OS (secondary)	Low
Anderson et al., 2022[24]	Scotland	1981-2018	Retrospective cohort study	31.0 versus 32.0 years (not only HR+)	102	612	Median: 4.1 years (not only HR+)	15.8 versus 14.7 years (not only HR+)	Year of diagnosis	OS	Low
Bae et al., 2022[37]	Korea	2004-2014	Retrospective cohort study	32.2 versus 40.0 years (not only HR+)	549	557	Median: 3.3 years (not only HR+)	8.2 years	Age at diagnosis, adjuvant ET/CT/ RT	OS	High

Table 1. Main characteristics of the studies included in the meta-analysis

Reference	Country	Years	Study design	Mean/median age at diagnosis in pregnancy versus no pregnancy cohort	Patients with pregnancy after HR+ BC, *n*	Patients without pregnancy after BC, *n*	Mean/ median time from diagnosis to pregnancy	Mean/median follow-up time in pregnancy versus no pregnancy cohort	Matching criteria for choosing controls/ controlling factors	Outcomes	Risk of bias[a]
Chuang et al., 2020[35]	Taiwan	2002-2014	Retrospective cohort study	31.0 versus 32.3 years (not only HR+)	87	311	Median: 3.31 years (not only HR+)	4.3 versus 3.8 years (not only HR+)	Age at diagnosis, year at diagnosis, propensity score for pregnancy, time to pregnancy/ DFS event	OS	Moderate
Rauh-Hain et al., 2022[36]	USA	2000-2012	Retrospective cohort study	32 versus 33 years (not only HR+)	240	273	Median: 2.72 years (not only HR+)	9.3 years (not only HR+)	Age, year at diagnosis, stage, grade, ER/PgR/HER2 status, CT/RT/ surgery, race/ ethnicity, median household income, insurance at diagnosis, marital status, Charlson comorbidity	OS	Moderate

Vai nepasliktina pamatdiagnozes prognozi?

Stimulācija pacientēm ar hematoloģiskajiem audzējiem

1. Olnīcu reakcija pēc stimulācijas sievietēm ar hematoloģisku vēzi ir līdzīga tai, kas ir vispārējā populācijā.
2. Pētījumi rāda, ka 62% sieviešu, kuras mēģinājušas ieņemt bērnu pēc vēža ārstēšanas, sasniegušas vismaz vienu grūtniecību.

Ovarian response to stimulation for fertility preservation in women with hematologic cancer

Tiffany Brun[a,*], Ludivine Dion[a], Sylvie Jaillard[b,c], Diane Bales[a], Mathilde Domin[a], Vincent Lavoué[a,d], Jean Levêque[a,d], Roch Houot[e,f], Solène Duros[a]

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JOURNAL ARTICLE

Hematologic cancers in women: from fertility preservation to post-cancer fertility outcomes

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Published: 30 April 2025 **Article history** ▾

Review • Revue

Oocyte Cryopreservation Outcomes in Women With Hematological Malignancies Undergoing Chemotherapy—A Systematic Review and Meta-Analysis

Stéphanie Dufour MD [1,2], Sophie-Anne Gagné BSc [3], Aaron Jackson MD [1], Lesleigh Abbott MD [4], Clara Q. Wu MD MSc [1,3]

Received 17 December 2024, Accepted 4 March 2025, Available online 27 March 2025, Version of Record 18 April 2025.

03 Vai pietiks laika to izdarīt?

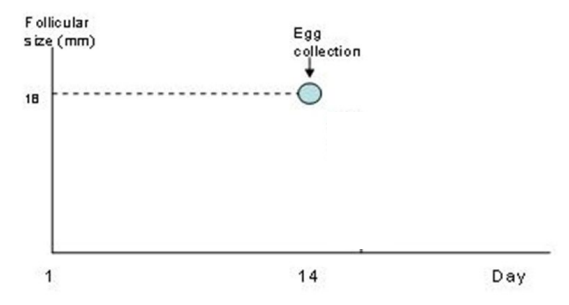
Vai pietiks laika to izdarīt?

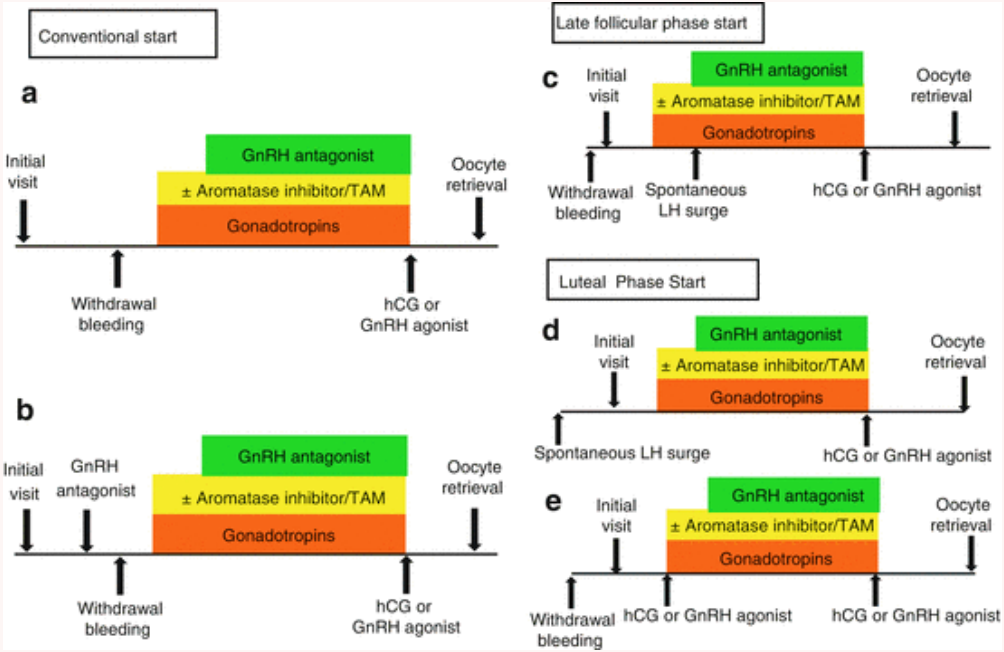
1. 8 nedēļas no operācijas līdz papildterapijas uzsākšanai.
2. Stimulāciju varam veikt jebkurā momentā, neatkarīgi no menstruālā cikla.

Kā veikt sagatavošanu sievietei?

1. Etaps: olnīcu sagatavošana
   - Naturālais cikls
   - Olnīcu kontrolēta stimulācija

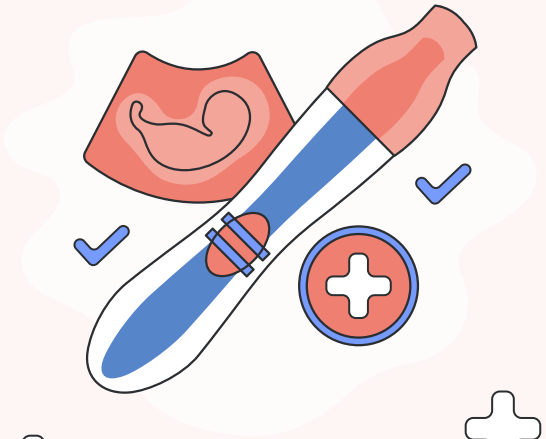
   10 – 15 dienas, ir iespējams sākt jebkurā menstruālā cikla dienā.





Cakmak. Ovarian stimulation in cancer patients. Fertil Steril 2013.

04 Olšūnu izdzīvošanas procents un vai tālāk var cerēt uz grūtniecību?



Olšūnu izdzīvošanas procents un vai tālāk var cerēt uz grūtniecību?

Vitrifikācija - ātrās sasaldēšanas metode, kas balstās uz strauju temperatūras pazemināšanu īsā laikā, kristālizācijas veidošanos novērš ar speciāliem krioprotektantiem.

Oocyte vitrification for fertility preservation for both medical and nonmedical reasons

Ana Cobo, Ph.D.,[a] Juan Antonio García-Velasco, M.D.,[b] José Remohí, M.D.,[a] and Antonio Pellicer, M.D.[a]
[a] IVIRMA Valencia, Valencia, Spain, and [b] IVIRMA Madrid and Universidad Rey Juan Carlos, Madrid, Spain

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https://doi.org/10.1016/j.fertnstert.2021.02.006

Oocyte survival rates and clinical outcomes with the use of vitrified oocytes for fertility preservation in different populations.

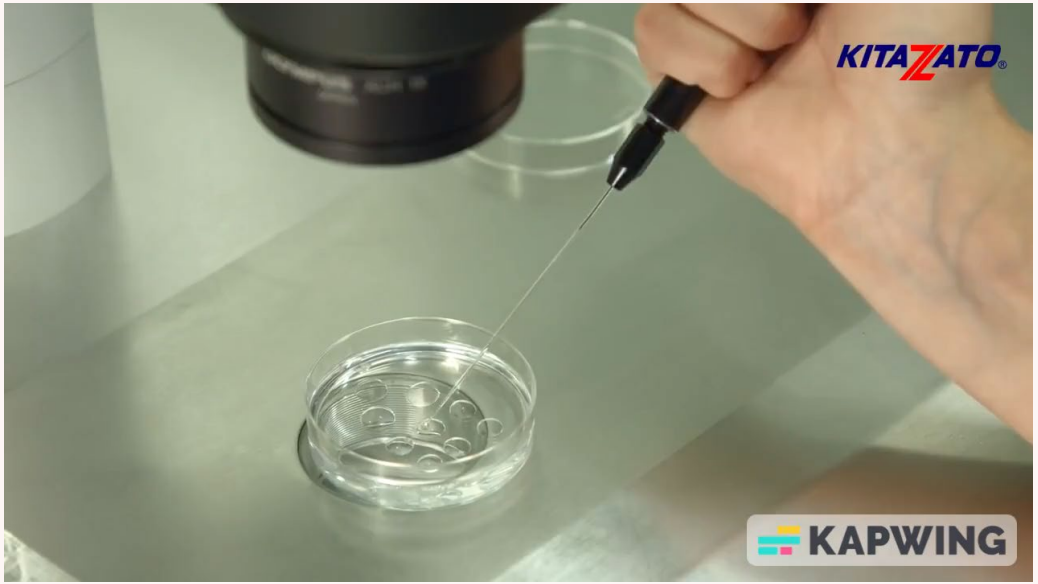
Author	Indication	No. of patients	No. of warming cycles	No. of warmed oocytes	Survival rate (%)	Clinical pregnancy rate (%)	Live birth rate (%)
Sanchez-Serrano et al., 2010 (32)*	Onco-FP	1	1	9	100	100	100
Kim et al., 2011 (33)	Onco-FP	1	1	7	71.4	100	100
García-Velasco et al., 2013 (34)*	Onco-FP	1	1	4		25	25
	EFP	26	26	191	84.8	42.3	19.2
Alvarez et al., 2014 (35)	Onco-FP	1	1	8	87.5	100	100
Da Motta et al., 2014 (36)	Onco-FP	1	2	19		50	50
Martinez et al., 2014 (37)	Onco-FP	11	11	65	92.3	54.5	
Perrin et al., 2016 (38)	Onco-FP	1	1	5	100	100	100
Cobo et al., 2016 (24)*	EFP	137	148	1,182	85.2	46.2	20.9
Doyle et al. 2016 (39)	EFP		128	1,283	86.1	57.1	38.6
Specchia et al., 2019 (40)	Onco-FP	11	14	73	86.3	30.8	15.4
Diaz-Garcia et al., 2018 (16)*	Onco-FP	49			77.3	36.4	29.1
Cobo et al., 2018 (26)*	EFP	641	680	5,830	83.9	50.7	33.7
	Onco-FP	80	81	605	81.8	41.4	31
Wennberg et al., 2019 (41)	EFP	38	49	393	78		26.3
Cobo et al., 2020 (42)*	Endo-FP	485	529	4,531	83.2	45.9	46.4

Note: Totals have not been calculated because the studies marked with asterisks (*) belong to the same investigators; therefore, the data may be overlapping. EFP = elective fertility preservation; endo-FP = fertility preservation in patients with endometriosis; onco-FP = oncological fertility preservation.

Cobo. FP results—elective and medical reasons. Fertil Steril 2021.

Olšūnu izdzīvošanas procents un vai tālāk var cerēt uz grūtniecību?

Olšūnu vitrifikācija:



Olšūnu izdzīvošanas procents un vai tālāk var cerēt uz grūtniecību?

Long-term storage of vitrified oocytes does not affect pregnancy and live birth rates: analysis of 5362 oocyte donation cycles

Marc Torra-Massana[a], Irene Miguel-Escalada[a,*], Rita Vassena[b], Amelia Rodríguez[b]

*Corresponding author. E-mail address: imiguel@eugin.es (I. Miguel-Escalada). https://doi.org/10.1016/j.rbmo.2023.04.019
1472-6483/

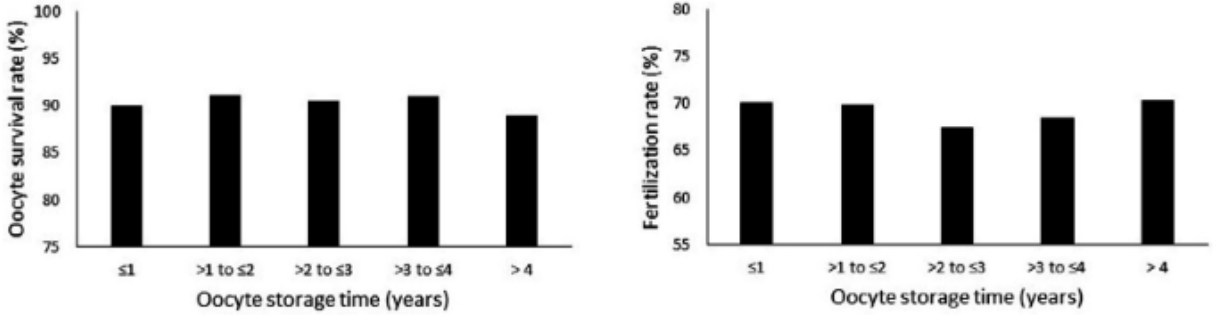


FIGURE 1 Adjusted values as predicted by linear regression of oocyte survival rate (left) and fertilization rate (right) for each category of oocyte storage time included in the study. Each time category was statistically compared with the reference group (≤1 year) using linear regression models. Oocyte survival (>1 to ≤2 years, $P = 0.1623$, >2 to ≤3 years, $P = 0.9773$, 91.06% for >3 to ≤4 years, $P = 0.9356$, and 88.91% for >4 years, $P = 0.9375$). The fertilization rate after intracytoplasmic sperm injection (>1 to ≤2 years, $P = 0.9924$, >2 to ≤3 years, $P = 0.1312$, >3 to ≤4 years, $P = 0.8978$, >4 years, $P = 0.9999$).

Olšūnu izdzīvošanas procents un vai tālāk var cerēt uz grūtniecību?

Live birth rate after female fertility preservation for cancer or haematopoietic stem cell transplantation: a systematic review and meta-analysis of the three main techniques; embryo, oocyte and ovarian tissue cryopreservation

E Fraison , S Huberlant , E Labrune , M Cavalieri , M Montagut , F Brugnon , B Courbiere

Human Reproduction, Vol.38, No.3, pp. 489–502, 2023
Advance Access Publication on November 24, 2022 https://doi.org/10.1093/humrep/deac249

human reproduction META-ANALYSIS *Reproductive epidemiology*

Table IV Female fertility preservation for cancer or haematopoietic stem cells transplantation.

	Embryo cryopreservation	Oocyte vitrification	Ovarian tissue cryopreservation
LBR after IVF	41 (34–48, I^2: 0%)*	32 (26–39, I^2: 0%)*	19 (15–24, I^2: 18.5%)*
Women with at least one live birth after IVF	43 (36–50, I^2: 0%)*	32 (25–39, I^2: 0%)*	17 (13–22, I^2: 0%)*
Miscarriage	22 (14–30, I^2: 0%)*	11 (6–19, I^2: 0%)*	14 (9–21, I^2: 33%)**
Spontaneous LBR			33 (25–42, I^2: 46.1%)**
Women with at least one spontaneous live birth			32 (23–41, I^2: 51%)**

Live birth rate (LBR as %) and percentage of miscarriage estimated for each fertility preservation method.
Percentage of events with two-sided CI estimated over all the publications; heterogeneity = I^2.
*Fixed effect model.
**Random effect model.

Secinājumi

01 Viennozīmīgi vajag saglabāt olšūnas.

02 Pie hormonālatkarīga audzēja var saglabāt olšūnas.

1) **Progesterona receptorpozitīvs**
- Grūtniecības iznēsāšana šaubīga, bet ar stimulāciju var saglabāt olšūnas.

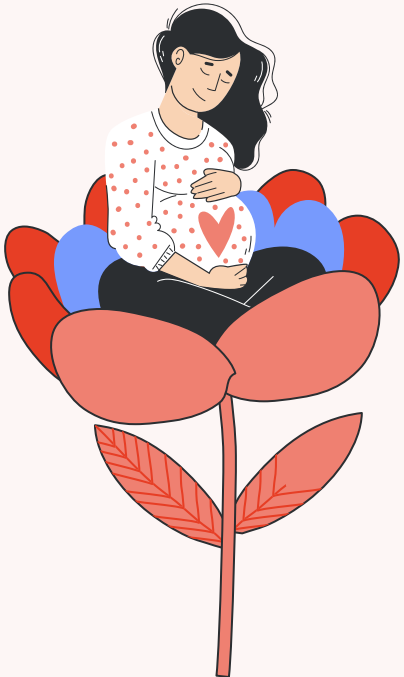
2) **Estrogēnu receptorpozitīvs**
- Tamoksifēna vai Letrozola lietošana stimulācijas laikā pasargā no estrogēnu līmeņa pieauguma.

3) **HER2 receptori**
- Nav korelācijas ar stimulāciju

Secinājumi

03 Olnīcu stimulācija pārsvarā nepagarina laiku starp ķirurģisko procedūru un ķīmijterapiju un/vai staru terapiju uzsākšanu.

04 Olšūnu sasaldēšanas metodes ir labi attīstītas, drošas un metode ir ar labu iznākumu.



Paldies par uzmanību!