Subtitle Format Shona

Chapter 1 Introduction

Nzira inoshamisa chaizvo inokonzera kuti kazai kamwechete kapinduke kuita zviuru zvakawanda zvinosika mhunu ndizvo zvatingati zvinoshamisa kupfuura zvimwe zvese muhupenyu.

Vaongorori vaveneruzivo rwemasikirwo anoitwa nhengo dzemuviri wemunhu uye dzinogadzirwa munhu asati aberekwa - kazhinji nhumbu ichangobatwa.

Makuriro emwana ari mudumbu inguva inozikanwa seyekugadzirira panguva iyi kusikwa kwemunhu kunoshandisa nhengo dzakawanda, uye nehunyanzvi nemashandiro akasiyana-siyana kuitira kurarama pakuberekwa.

Chapter 2 Terminology

Muvanhu, nhumbu Inotora masvondo makumi matatu nemasere kana tichitanga kuverenga kubva musi wekusangana, kana kuti,kubva pakubata nhumbu kusvika pakuberekwa.

Mumasvondo masere ekutanga muchangosangana, magadzirirwo emwana anozivakanwa seemburiyo izvi zvinoreva kukurira mukati. Nguva iyi inonzi nguva yekugadzira embryo, uye ndipo panogadzirwa zvakaita senhengo dzemuviri dzese.

Panoguma masvondo masere kusvikira pakukwana kwenhumbu, mwana anenge achikura anodaidzwa kuti "fetus," zvinoreva munhu asati aberekwa. Nguva iyi inonzi, nguva yekufetus. Muviri unotangakukura uye nhengo dzemuviri dzinotanga kushanda

Zvese zvinoitika panguva Ino, Zvinotanga kubvira panguva yekusangana yemunhurume nemunhukadzi

The Embryonic Period (The First 8 Weeks)

Embryonic Development: The First 4 Weeks

Chapter 3 Fertilization

Kana tichitevera Biology, "munhu anotanga kusikwa panosangana murume nemukadzi" kana murume nemukadzi vasanganisa nhengo dzavo, uyu makumi maviri ane nhatu dzinonzi ma chromosomes pavanosangana zvinoita kuti vatange kusika mumhu.

Kumadzimai izvi zvinozikanwa "sezai" ramai asi zita racho chairo rinonzi "oocyte".

kune vanhurumewo zvinozivikanwa sehuronyo. zvinozivikanwa sehurume kana kuti "sperm" muchirungu asi zita racho chairo rinonzi "spermatozoon".

Kana nyoka yemunhukadzi yaburitsa zai kana"oocyte" zvinodaidzwa kuti ovulation, zai kana "oocyte" ne "spermatozoon" zvobatana mune tumatambo twakabata chibereko, twunozivakanwa nezita rekuti "Fallopian tubes".

Twutambo utwu Twunobatanidza ma"ovaries" nechibereko.

Chinobuda ipapo chimubatanidzwa Che embryo chinonzi "zygote", izvi zvinoreva kupinda pajoke rimwe kana kubatanidzwa.

Chapter 4 DNA, Cell Division, and Early Pregnancy Factor (EPF)

DNA

Zygote rine makumi mana nematanhatu enhengo nhengo idzi ndidzo dzinovamba upenyu hwemunhu ega-ega uyendiyo inonzi "genetic blueprint" yakakwana. Masikirwo emunhu anogara mukati mehata yakamonwa ye ma"molecules" anonzi "DNA". Anochengetedza makuriro Anoita munhu kubva pakuberekwa kusvika muviri wese wakwana.

Ma "DNA molecules" akafanana nemanera akamonerera anodaidzwa kuti "double helix". Manera aya anenge aine Ma"molecules" maviri-maviri, kanakuti mabesi anonzi "guanine", "cytosine", "adenine", ne "thymine".

Ma"Guanine" anosangana chete ne "cytosine", ne "adenine" ine "thymine". Mukati memunhu ega-ega mune Ma"cells" anopfuura zviuru zvezviuru zvitatu zvakasungwa pauviri-viri.

Saka "DNA" ye "cell" rimwechete Inochengeta ruzivo rwekutoti dai painyorwa nemazwi, zvaireve kuti vara rekutanga pabesi rega-rega rinotoda mavara akapfuura miriyoni nechidimbu zvemapepa akanyorwa!

Kuzoti zvikaitwa mudungwe, inokwana mutsetse wakareba mafiti matatu nechidimbu kana kuti mita imwechete.

Tikamonorora Yese zvayo "DNA" inowanikwa mumunhu mukuru tinowana zana rezviuru zvema'cells' kana kuti rwendo rwunopfuura mamayera makumi matanhatu ane nhatu ezviuru. Pano tingati zvakaenzana nekubva pasi pano kuenda kuzuva nekudzoka Kunokwana mazana matatu ane mana.

Cell Division

Kana pachangopera zuva rimwechete muchangosana, zai kana "zygote" rinenge rapinduka kuita maviri, nenzira inodaidzirwa kuti 'mitosis' zai rimwe rinotsemuka kuita maviri ayo anoita mana zvichingoenda zvakadaro.

Early Pregnancy Factor (EPF)

Mumashure mezuva rimwechete kana kuti maviri muchangopedza kusangana, nhumbu inenge yatobata uye inoongororwa ne "hormone" rinonzi "early pregnancy factor" rinowanikwa muropa ramai.

Chapter 5 Early Stages (Morula and Blastocyst) and Stem Cells

Mumashure memazuva Matatu kana mana mabvakusangana, kumeduka-meduka kwema'cells' emu'embryo' kunoshanduka kuita sedenderedzwa uye "embryo" inopiwa zita rekuti "morula".

Mumashure memazuva mana kana mashanu Muchidenderedzwa munoita buri kana zvadayi "embryo" inopiwa zita rekuti"blastocyst".

Zvino ma"cell" arimukati me "blastocyst" anopiwa zita rekuti "inner cell mass" uye ndiwo anokurisa musoro,muviri, nedzimwe nhengo dzemuviri dzinove ndidzo dzakakosha pamunhu.

Ma"cell" anowanikwa Mukati-kati me"cell mass" anopiwa zita rekuti"embryonic stem cells" nekuti anokwanisa kuvaka rimwe rema'cell" anopfuura zviuru zviviri anowanikwa mumuviri wemunhu.

Chapter 6 1 to 1½ Weeks: Implantation and Human Chorionic Gonadotropin (hCG)

Kana mukatevera Mukati mechibereko, ka "embryo" kekutanga kanozvidyara mukati memadziro echibereko. Izvi zvinodaidzwa kuti"implantation" inotanga pamazuva matanhatu, iyo inoguma mumashure memazuva gumi kana guminemaviri muchangosangana.

Ma"cell" anobva mu"embryo" anotangisa kuburitsa "hormone" rinonzi "human chorionic gonadotropin", kana "CG", zvinove ndizvo zvinowanikwa pakuongorora kubatwa kwenhumbu.

Iyi 'HCG' ndeyekugadzirira mai kuti vachirega kuenda kumwedzi senguva dzose kuitira kuti nhumbu ibate.

Chapter 7 The Placenta and Umbilical Cord

Zvinoitika kana ma"cells" arikunze kwe "blastocyst" anokonzera kukura kweruguvhute, urwu rwunoita basa rekudzivirira mwana nema"embryonic circulatory systems".

Ruguvhute rwunounza mweya we"oxygen", zvinokurisa, ma"hormones", nezvinorapa mwana achirimudumbu; kubvisa tsvina yese; nekudzivirira ropa ramai kuti risasangane nere "embryo" kana nere"fetus".

Ruguvhute zvakare ndirwo rwunogadzira ma"hormone" nekuchengetedza madziyiro ema"embryo" ne"fetus" kuti adziye kupfuura amai.

Ruguvhute ndirwo rwunofambisa zvese zvinodiwa pamhunu rwuchishandisa tsinga dzinowanikwa muguvhu.

Zvese zvinochengetedza upenyu zvinowanikwa muruguvhute zvinokunda zvinowanikwa nzvimbo dzekurapa muzvipatara zviripamusoro-soro.

Chapter 8 Nutrition and Protection

Mukupera kwesvondo, ma"cell" emukati-kati me"cell mass" anoita zviviri zvakafukidza zvinonzi "hypoblast" ne " epiblast".

Iyi "hypoblast" inokonzera kukura kwechakavhara zai, chinova chinokonzera kufamba kwezvinokudza mwana paanenge achiri pazera re"embryo".

Ma "cell" anowanikwapa "epiblast" anoita mambure anonzi "amnion", anova ndiwo anochengeta 'embryo' ichapinduka kuita "fetus" kusvikira mwana aberekwa.

Chapter 9 2 to 4 Weeks: Germ Layers and Organ Formation

Pakupera kwemasvondo maviri anechidimbu, "epiblast" inenge yavepo uye ne ma"specialized tissues" matatu, kana kuti ma "germ layers", anonzi "ectoderm", "endoderm", ne" mesoderm".

"Ectoderm" inokonzera kukura kwenhengo dzemuviri dzinosanganisa uropi, musana, tsinga, ganda, nzara, nevhudzi.

"Endoderm" inogadzira mukati mehuro nezvekufema zvese uye nezvekumedza nekudya zvese, uye nekugadzira dzimwe nhengo dzese dzemuviri dzakaita sechitaka nerwatata.

"Mesoderm" inogadzira mwoyo, neitsvo, mapfupa, tsinga dzinobatanidza mapfupa, nyama yemuviri, tsinga dzeropa, nedzimwewo nhengo.

Mumasvondo matatu uropi hunoita nhengo nhatu dzakakosha dzinonzi "forebrain", "midbrain", ne "hindbrain".

Mukugadzirwa uku nhengo Dzekufema nedzekudyisa dzinenge dzichigadzirwawo.

Chekutanga nhengo dzeropa dzinotanga kuonekwa mukatimezai riye, tsinga dzeropawo dzinotanga mukati mese me "embryo", nekutanga kwenhengo dzemwoyo.

Pakare ipapo, mwoyo unotanga kukura wotanga kupetana uye nhengo dzemwoyo dzotanga kukura.

Mwoyo wototanga kurova masvondo matatu nezuvarimwechete muchangosangana.

Nhengo dzinofambisa ropa ndidzo dzinotanga kugadzirwa, pano tinoreva zvese zvekufambisa ropa, kuti muviri urarame.

Chapter 10 3 to 4 Weeks: The Folding of the Embryo

Pakati pemasvondo matatu nemana, muviri wese unotanga kuwonekwa kuti uropi, musana, nemwoyo unenge urimu "embryo" zvinonyatsowonekwa zvakabatana neganda rezai.

Makurumidziro ekukura anoita kuti "embryo" ipetanepetane. Kupetana uku kunosanganisa ganda rakakomberedza zai neganda remukati menhengo dzekumedza kudya zvovaka chipfuva nenhengo dzemudumbu memwana achirimudumbu

Embryonic Development: 4 to 6 Weeks

Chapter 11 4 Weeks: Amniotic Fluid

Mumashure memasvondo mana mvura inonzi "amnion" inokomberedza "embryo" igozadza munogara zai. Iyi mvura haina hutachiona uye inonzi "amniotic fluid", uye ndiyo inodzivirira "embryo" kuti isakuvadzwe.

Chapter 12 The Heart in Action

Mwoyo unorova zvinoverengeka Kuita zana nemakumi matatu piminiti rega.

Apa onaiwo Kuchinja ruvara kunoita mwoyo kana ropa richipinda nekubuda munhengo dzemwoyo paunorova.

Mwoyo unorova kanokwana makumi mashanu emamiriyoni mwana asati aberekwa uye zviuru zvitatu zvemamiriyoni Kana tichiyera upenyu hwemakore makumi masere

Chapter 13 Brain Growth

Makurumidziro ekukura kweuropi kunoonekwa nemapindukiro eruvara rwe "forebrain", "midbrain", ne "hindbrain".

Chapter 14 Limb Buds

Maoko nemakumbo anoonekwa kutanga kukura nekubuda kwezvinenge mazvimbiswa mumasvondo mana.

Apa ganda rinenge richinjenjemera nekuti rinenge rakakora se'cell' rimwechete.

Kana ganda richikora, kunjenjemera uku kunopera, zvinoreva kuti tinogona kuona nhengo dzemukati dzichikura kwemwedzi mumwechete unotevera.

Chapter 15 5 Weeks: Cerebral Hemispheres

Pakati pemasvondo mana nemashanu, uropi unoenderera nekukura hwopetana-petana kuita mapato mashanu akasiyana.

Musoro unotora nzvimbo huru ye hukuru hwe"embryo".

Nzvimbo inogara huropi Inenge denderedzwa ndiyo inoratidzika ichikura panhengo dzose dzeuropi.

Mabasa ese anotanga kuitwa nehuropi anosanganisa pfungwa, kudzidza, kuchengeta pfungwa, kutaura,kuona, kunzwa, kufambisa nhengo dzemuviri, uye kupindura mibvunzo yakaoma.

Chapter 16 Major Airways

Pakugadzirwa kwenhengo dzekufema, divi rekurudyi nedivi rekuruboshwe rwemapapu rwunenge rwakasiyana uye rwuchazobatana gare-gare negurokuro nemapapu.

Chapter 17 Liver and Kidneys

Onaiwo kukura kwechitaka chakazadza dumbu uye chakabatana nemwoyo urikurova.

Itsvo dzakakwana dzinoonekwa mumashure memasvondo mashanu.

Chapter 18 Yolk Sac and Germ Cells

Kasaga kane ma"cell" ekutangisisa kuvaka munhu anonzi ma"germ cells". Mumasvondo mashanu aya ma "germ cell" anotama kuenda kunezvekuita mwana zvinowanikwa pedyo neitsvo.

Chapter 19 Hand Plates and Cartilage

Mumasvondo mashanuwo, "embryo" inoita zvekuvaka maoko, uye mabhonzo akapfava anotanga kuitwa kwapera masvondo mashanu.

Pano tinoona Kugadzirwa kweruoko rweruboshwe nechanza chacho mumasvondo mashanu nemazuva matanhatu.

Embryonic Development: 6 to 8 Weeks

Chapter 20 6 Weeks: Motion and Sensation

Pamasvondo matanhatu dende rekuchengeta huropi rinenge richikura nekukurumidza kukunda dzimwe nhengo dzehuropi.

Pano "embryo" inotanga kuita mafambiro anenge kugwina-gwina. Izvi zvinodiwa nekuti zvinokudza inonzi "neuromuscular development".

Mukabata muromo munoita kuti "embryo" idzosere musoro mukati.

Chapter 21 The External Ear and Blood Cell Formation

Pano nzeve dzinotanga kukura

Pamasvondo matanhatu, kugadzirwa kweropa kunenge kwatanga muchiropa munowanikwa ma"lymphocytes" achigara imomo. Idzi nhengo dzinowanikwa muropa ndidzo dzakakosha pakugadzira masoja emuviri.

Chapter 22 The Diaphragm and Intestines

Pazasi pemapapu, panenhengo inoshandiswa pakufema kwemunhu, uye pamasvondo matanhatu inenge yakwana.

Pano ura hudiki hunenge huchionekwa uye ndihwo huchaita guvhu ichi chinhanho chinonzi "physiologic herniation", uye chinogadzirira dzimwe nhengo dzinowanikwa mudumbu.

Chapter 23 Hand Plates and Brainwaves

Pamasvondo matanhatu maoko anotanga kunyatsoonekwa

Uropi unenge hwava kutoshanda mumasvondo matanhatu nemazuva maviri.

Chapter 24 Nipple Formation

Minyatso inotanga kukura mumativi emuviri ichienda kunzvimbo inowanikwa minyatso pamberi pechipfuva.

Chapter 25 Limb Development

Panopera masvondo matanhatu nechidimbu, magokora anenge avakuonekwa, zvigunwe zvinotanga kunyatsoonekwa zvisina kubatana uye ruwoko rwunogona kufamba-famba.

Mapfupa anenge achisimba,uye izvi zvinonzi "ossification", zvinotanga nebvupa repabendekete kana kuti "collar bone", uye mapfupa eshaya dzepamusoro nedzepazasi.

Chapter 26 7 Weeks: Hiccups and Startle Response

Munhikwi unowonekwa pamasvondo manomwe.

makumbo anoonekwa kutanga kufamba nekudaira kanamai vavhunduka.

Chapter 27 The Maturing Heart

Nhengo ina dzemwoyo dzinenge dzavakukwana. Pamagariro edu, mwoyo unorova kanokwana ka167 paminiti rega.

Kugwina kwemwoyo kunobatwa mumasvondo manomwe anechidimbu anoratidza marovero emwoyo wemunhu mukuru.

Chapter 28 Ovaries and Eyes

Mumadzimai panogara mazai,panenge pavakuonekwa pamasvondo manomwe.

Pamasvondo manomwe anechidimbu,Kutanga kweziso kunenge kwavakuonekwa zvakanaka uye chekubwairisa ziso, izvi ndizvo zvinotangisa kukura nekukurumidza.

Chapter 29 Fingers and Toes

Minwe yemaoko inonyatsokubuda uye zvigunwe zvemaoko hazvisisina kubatana nezvekutsoka

Maoko avakugona kusangana, uye tsokawo dzakusangana.

Mabvi avakuonekwa.

The 8-Week Embryo

Chapter 30 8 Weeks: Brain Development

Pamasvondo masere uropi hwunenge hwakwana uye huremo hwacho hwunenge hwuchikwana hwuremo chidimbu che "embryo".

Pano makuriro acho anokurumidza zvakanyanya.

Chapter 31 Right- and Left-Handedness

Pamasvondo 8,75% ye'embryo' Inenge ichishandisa ruoko rwerudyi Chidimbu chasara hachina chinoshandisa ruboshwe kunyanya kana kusavenehanya nazvo Uku ndiko kutanga kwekuona Vanorerekera kurudyi kana ruboshwe.

Chapter 32 Rolling Over

Magwaro ezvevacheche anotaura Nezvekushanduka kuti kunoonekwa masvondo gumi kana makumi maviri. Asika, kushanduka uku kunoshamisa kunokurumidza kuonekwa munzimbo

dzine "low-gravity" inenge iri munonzi mu'amniotic sac'. Chinodiwa chete kushaya simba rekurwisana ne'gravitational force' inenge irikunze kwechibereko inodzivirira kushanduka.

Pano "embryo" inenge yave kutamba zvinesimba.

Zvinogona kunonoka kana kukurumidza, kamwechete kana kakawanda, ipapo-ipapo kana zvekuvhunduka.

Musoro nemutsipa zvinenge zvava Kutendeuka uye maoko achibata kumeso izvi zvinoitika nguva dzose

Kana "embryo" ikabatwa inobwaira, kana kuomesa shaya, kuda kubata, kana kufambisa zvigunwe.

Chapter 33 Eyelid Fusion

Pakati pemasvondo manonwe nemasere,nhengo dzese dzeziso dzinokurumidza kukura dzigovhara ziso kunge richavharika zvachose.

Chapter 34 "Breathing" Motion and Urination

Kunyange muchibereko musingapinde mhepo, "embryo" inoratidza kufema mumasvondo masere.

Panguva ino, Itsvo dzavakubudisa weti inosangana ne'amniotic fluid'

Mu "embryo" dzevanarume, panotanga kukura zvechirume pagotangawo kugadzirwa zvinonzi "testosterone".

Chapter 35 The Limbs and Skin

Mapfupa,nemajoyini, nyama, tsinga, ne tsinga dzeropa dzenhengo dzinenge dzanyatsofanana zvikuru nedzevakuru.

Pamasvondo masere ganda, rekunze, rinenge richikurawo rinenhengo dzakawanda, richipera kunjenjemera.

Tsiye dzinotanga kukura nemvere dzinokura kutenderedza muromo.

Chapter 36 Summary of the First 8 Weeks

Pamasvondo masere ndopanoguma inonzi "embryonic period".

Panguva ino, "embryo" yega-yega inenge yabva mu"cell" rimwechete kusvika ma"cell" anokwana zviuru nezviuru zvemamiriyoni anovaka zviuri zvina zvenhengo dzakasiyana.

Panguva iyi "embryo" inenge yave nenhengo dzese dzayo dzakafanana nedzevanhu vakuru.

The Fetal Period (8 Weeks through Birth)

Chapter 37 9 Weeks: Swallows, Sighs, and Stretches

Zera re"fetal period" rinoguma panoberekwa mwana.

Pamasvondo mapfumbamwe, kuyamwa chigunwe kunotanga, iyi ndiyo nguva mwana anenge avekumedza "amniotic fluid".

Pano "fetus" inenge yavekubata zvinhu, kufambisa musoro kuendesa kumberi nekumashure, kushama nekuvhara muromo, kufambisa rurimi, kufemereka nekuzvitatamura.

Tsinga dzekumeso, nedzemukati memaoko, nemukati metsoka dzinenge dzavekunzwa kubatwa.

"Kana ikabatwa zvinyoro-nyoro mukati metsoka," "fetus" inokotamisa magaro nemabvi kanakupeta zvigunwe.

Pano maziso anenge Akanyatsovharwa.

Muhuro munenge mavekuwonekwa, nhengo dzekubudisa izwi uye izvi zvinoreva kuti izwi ravekuzobuda.

Muvanasikana, chibereko chinenge chavekuonekwa uye zvese zvemumhukadzi zvinenge zvavepo, ma "cell" acho anonzi "oogonia", anenge achigadzirwa muma "ovary".

Zvinoratidza kuti munhuyiko zvoonekwawo kuvakomana kana vasikana.

Chapter 38 10 Weeks: Rolls Eyes and Yawns, Fingernails & Fingerprints

Kukura kwakakurumidza pakati pemasvondo mapfumbamwe negumi kunowedzera huremo hwemiri zvakanyanya (75%).

Pamasvondo gumi, kubwaira kunenge kwatanga kunokonzera kuti ziso rigone kufamba richitarisa pasi.

"Fetus" inotanga kushama nekuvhara muromo.

"Fetus" zhinji dzinoyamwa chigunwe chekurudyi.

Divi rehura mudumbu hwakabatana neguvhu hwavakudzokera mukati medumbu.

Kusimba kwemapfupa kwavekuitika.

Nzara dzeminwe nezvigunwe dzinenge dzavekutanga kukura.

Minwe yakasiyana-siyana inotanga Kubuda pakupera kwemasvondo gumi. Izvi ndizvo zvinoshandiswa pakuzivisa munhu muhupenyu hwese.

Chapter 39 11 Weeks: Absorbs Glucose and Water

Pamasvondo gumi nerimwechete mhuno nemuromo zvinenge zvanyatsobuda. Sezvinoita nhengo dzemuviri, zvinoshanduka nekukura uye nguva yega-yega inezvainoita pamakuriro emunhu.

Hura hunotanga kuchengeta zvekudya nemvura zvinenge zvamedzwa ne"fetus".

Kuti munhuyiko? zvinogadzirwa pakusangana, zvonoratidza kuti munhuyiko zvinotanga kuonekwa pamurume kana mukadzi.

Chapter 40 3 to 4 Months (12 to 16 Weeks): Taste Buds, Jaw Motion, Rooting Reflex, Quickening

Pakati pemasvondo gumi nerimwe negumi nemaviri huremo hwe:fetus" hunowanda zvakaita (60%).

Pamasvondo 12 ndipo Panopera chidimbu chechitatu chekutanga, kana kuti "trimester", yenhumbu.

Pano zvinopa kuraira zvinodyiwa zvavakuwanikwa mumukanwa. Panozvarwa mwana, zvekuraira Kudya zvinowanikwa parurimi chete nemukati nechepamusoro pemukanwa.

Pano tsvina inotanga kubuda pamasvondo guminemaviri zvigoramba zvakadaro kusvika masvondo matanhatu.

Tsvina iyi inobuda mu'fetus' nemuvana vacheche inonzi "meconium". Inosanganisa zvinonzi ma"enzyme" anobatsira kuzeya, ma'proteins',uye dzimwewo nhengo dzakafa dzinenge dzichibuda muhura.

Pamasvondo makumi maviri, kureba kwemaoko kunenge kwava kuzokwana kusvika pazera remunhu. Makumbo anotora nguva yakareba kusvika pazera rakakwanira munhu.

Kusara kwemusana nepanhova, muviri wese kana "fetus" yave kuvhunduka ikabatwa.

Zvinoita kutivarume nevakadzi vasiyane zvinotanga kuonekwa. "Fetus" yechikadzi inoratidza kufambisa muromo zvakanyanya kupfuura "fetus" yechirume.

Izvi zvakasiyana nekuvhunduka kunoitika pakutanga, iyi ndiyo nguva mwana anocheukira kuri kubva chekudya uye muromo uchivhurwa. Kucheuka uku kunonzi "rooting reflex" uye kunoramba kuriko mwana azvarwa, uye kunobatsira kuti mwana agone kuwana kunezamu ramai paanenge achiyamwa.

Kumeso kunoramba kuchikura apawo nyama inowanikwa matama otanga kukura mazino achitangawo kumera.

Pamasvondo gumi nemashanu, tsinga dzeropa dze"stem cells" dzinokura dzichiwanda mumwongo wemapfupa. Apa ndipo panogadzirwa ropa rakawanda.

Kufamba-famba kunotanga musvondo rechitanhatu re"embryo", mudzimai ane nhumbu anonzwa kufamba-famba pakati pemasvondo gumi nemana negumi nemasere Chiitiko ichi chinopiwa zita rekuti "quickening".

Chapter 41 4 to 5 Months (16 to 20 Weeks): Stress Response, Vernix Caseosa, Circadian Rhythms

Pakupera kwemasvondo 10 ne6,matanho ekurapa anoshandisa zvinobaya zvinenge tsono kana zvimwe pedyo ne'fetus' zvinokanganisa ma "hormone" obva avhunduka achibva aburitsa "noradrenaline", kana "norepinephrine", yosangana neropa. Vana vacheche kana vanhu vakuru vanowanikwawo nezvakadai kana vavhundutswa nekubayiwa.

Munhengo dzekufemesa, mapapu nezvakadaro zvavakutokwana.

Panobuda zvimwe zvichena Zvinodzivirira zvinonzi "vernix caseosa", zvinofukidza 'fetus'yese. "Vernix " iyi inodzivirira ganda kuti risakuvadzwe kana kupiswa ne"amniotic fluid".

Mushure memasvondo 19 ekufamba kwe "fetus" kufema kunotanga, nekurova kwemwoyo kwotanga kutevera nzira yemazuva ese inonzi "circadian rhythms".

Chapter 42 5 to 6 Months (20 to 24 Weeks): Responds to Sound; Hair and Skin; Age of Viability

Pamakumi maviri emasvondo chekunzwa, chirimukati-kati menzeve, chinenge chatokwana kuenzana nechemunhu mukuru uye chiri mukatikati menzeve Kubva pano, "fetus" inotanga kuratidza kunzwa zvakawanda.

Bvudzi rinotanga kumera mumusoro.

Zvinodiwa paganda zvavapo zvese, kusanganisa tumvere nezviri pasi peganda.

Pamasvondo makumi maviri ane rimwe kana maviri muchangosangana, mapapu anenge avekukwanisa kufema mweya. Ichi chinhanho chakakosha pakurarama sekuti kurarama kwemwana abuda mudumbu kunokwanisika Pane mamwe ma'fetus' Pane nzira dzanozikanwa nenyanzvi dzanachiremba dzekuti mwana akwanise kurarama kana aberekwa nguva isati yakwana.

Chapter 43 6 to 7 Months (24 to 28 Weeks): Blink-Startle; Pupils Respond to Light; Smell and Taste

Pakupera kwesvondo makumi maviri anemana maziso anotanga kusvinura uye "fetus" inotanga kubwaira. Kutanga kunzwa, mheremhere kunonyanya kukurumidza kutanga pa "fetus" yechikadzi.

Vanamazvikokota vakawanda vanoti kunzwa mheremhere uku kunogona kukanganisa hutano hwe "fetus". Zvinowanzoitika apa kukanganisa marovero anota mwoyo, "fetus" ichikurumidza kumedza, nekukurumidza kushanduka magariro. Zvinogona kunganganisika zvachose zvinosanganisira kusanzwa zvachose.

Kana "fetus" ichikanganisika pakufema kana kuzarirwa zvakafanana nekufemera mukati nekunze kanokwanisa kuita ka44 paminiti yega

Pachidimbu chekupedzisira chemwedzi mitatu yenhumbu, uropi hunokurumidza kukura uye simba zhinji rinoshandiswa ne "fetus". Kurema kwehuropi kunowanda zvakapetwa kanokwanisa kuita kashanu

Pamasvondo 20 anematanhatu misodzi inotanga kubuda.

Maziso anotanga kunzwa kutosvorwa, pamasvondo makumi maviri nemanomwe Kutosvorwa uku kunoita kuti kupenya kusasvike mukati meziso muhupenyu hwemwana hwese.

Zvese zvinodiwa pakushandisa nhengo dzinonhuhwidza zvinenge zvavakushanda Zvakaongororwa pamapurimicha zvinoratidza kuti kugona kunhuwidza kunotanga pamasvondo makumi maviri nenhanhatu muchangosangana.

Kanapakaiswa chinhu chinonhuwirira mukati me "amniotic fluid" zvinowedzera kumedza kunoitwa ne "fetus". Pane zvinoita kuti, "fetus" ikanganisike kumedza nekunge paiswa zvinovava. Kazhinji kufinyamisa kumeso kunotevera.

Dzimwe nguva pane kunenge kukava makumbo kwakafanana nekufamba,kunoitika kunenge kusvetuka-svetuka.

Iyezvino "fetus" inenge isisina kuwunyana kumeso sezvo mafuta anenge avekuwanikwa mukati meganda. Mafuta anobatsira kuti muviri usatonhorwe Uye kupa simba kumwana kana aberekwa.

Chapter 44 7 to 8 Months (28 to 32 Weeks): Sound Discrimination, Behavioral States

Pakupera kwemasvondo makumi maviri nemasere 'fetus'inokwanisa kunzwa mhere-mhere nezeve-zeve.

Pakupera kwemasvondo 30,kuratidza kufema kunenge kwavekuonekwa uye kwavekuonekwa nguva zhinji mu "fetus" zhinji.

Pamwedzi mina yekupedzisira yenhumbu, "fetus" inoratidza nguva yekutamba igoratidzawo nguva yekuzorora. Izvi zvinoratidza zvakahwanda zviri mukati-kati metsinga dzehuropi.

Chapter 45 8 to 9 Months (32 to 36 Weeks): Alveoli Formation, Firm Grasp, Taste Preferences

Pamasvondo makumi matatu Anemaviri zvinonzi "alveoli", kana zvekufemesa, zvinotanga kukura mumapapu. Izvi zvicharamba zvichikura kusvikira mwana avenemakore 8.

Pamasvondo 35 "fetus" inenge yavekugona kubata.

Pano "fetus" yanga ichiwana Zvakawanda-wanda zvichaita kuti mwana adewo izvozvo kana azvarwa. Pano tingati "fetus" inamai vaidya "anise", chidyo chinopa chiwitsi che"licorice" manakiro, achadawo kudya "anise" kana azvarwa. Vacheche vasina kumboraira "anise" mudumbu havadi kana kuidya.

Chapter 46 9 Months to Birth (36 Weeks through Birth)

'Fetus' ndiyo inotanga kuda kubuda nekubuditsa ma"hormone" akawanda anonzi "estrogen" uye ndipo panotanga kushanduka kwe "fetus" kuita mwana.

Kurwadziwa kwamai kunokonzerwa nekutatamuka kwechibereko, zvinokonzera kuti mwana aberekwe.

Kubva pakusangana Kusvika pakuzvarwa nekukura, makururo emunhu chinhu chisingapere, chinoenderera, uye chisina anoziva. Pane zvitsva zvirikuwanikwa nezvenyaya iyi inoshamisa chaizvo zvinoratidza kukosha kunoita kuchengeta "fetus" ichikura zvinova zvakanaka uye zvinopa hutano hwakanaka.

Kana tichiramba tichiwedzera kunzwisisa kwedu nyaya iyi, zvichatibatsirawo kuti vana vawane utano hwakanaka vasati vazvarwa nekunge vazvarwa.